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The Indiana University School of Business Division of Research

Indiana Business Review

Volume 57 February, 1982

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In this issue

This is the first issue of the *Indiana Business Review* in its new format. Readers of this service from the Indiana University School of Business have become accustomed to six bi-monthly issues of the IBR and eleven issues of a companion Data Supplement. In response to budgetary constraints and changes in the information environment, a new IBR has been designed.

Until the times do alter, the *Indiana Business Review* will be issued monthly, except in January. The Data Supplement no longer exists, but much of its content will appear in these pages. Monthly notes and commentary on the state's economy will be found under the heading "Indiana's Business." Data contained in this new IBR will focus on the state and offer some contrast between the state and the nation. Data concerning national economic indicators are now so widely available they need not be repeated in these pages.

To get this new venture on the right track, Professor George Smerk offers an update on the activities and prospects for the South Shore Line and commuter travel in northern Indiana.

This month Indiana's Business reviews the Hoosier economy in 1981 with the finding that there was improvement for the year, albeit slight, from the dismal performance of the preceding year.

Long term readers of the IBR will note that the reincorporation of the Data Supplement and resumption of monthly issuance returns the IBR to its status of the fifties and sixties. This current change in format is intended to sustain the realiability of this service and the responsive, innovative leadership which has characterized the IBR over many decades.

Morton J. Marcus
Editor

South Shore Update

GEORGE M. SMERK

Professor of Transportation, Indiana University, School of Business; Governor's Trustee to the Northern Indiana Commuter Transportation District

Introduction

The Chicago South Shore and South Bend Railroad—the South Shore Line—is a unique Hoosier institution. It is the last of a long line of electric interurban railroads that once served many parts of the United States. Interurbans were once ubiquitous in Indiana; a network of lines radiated from Indianapolis in all directions and another group of lines, including what became the South Shore, crossed the northern part of the state. All are gone now except the South Shore. Over the years, the South Shore has changed from a typical interurban line to a commuter passenger railroad linking northwestern Indiana with Chicago's Loop. The line also carries substantial amounts of freight, particularly coal, to electrical generating plants and steel mills in northern Indiana.

There have been earlier reports in the *IBR* that cover the South Shore through late 1979.[1] In this article, readers will be brought up to date on what has happened with the South Shore. The motto of the railroad in recent years has been "The Little Train That Could," found on a decal of a cartoon train making its whimsical way to Chicago. The events of the recent past, of the present, and of the near future will help assure that "The Little Train That Could" will become "The Little Train That Will."

The refurbishment of the South Shore comes under the jurisdiction of the Northern Indiana Commuter Transportation District (NICTD). The district, which was created under Indiana state law, embraces Lake, Porter, LaPorte, and St. Joseph counties, through which the railroad operates. Financial support includes a special state appropriation to help match the federal capital grant that will pay for 80% of the capital improvements; the state money is matched with an equal sum of local dollars. The proceeds of the indefinite situs tax on leased rail cars also goes to NICTD through the governor and is used primarily to help match federal operating aid. The district also uses the funds from other federal programs, mainly operating aid, as well as the state matching funds available to all transit operations in the state to help match federal aid programs.

The work to be accomplished in the refurbishment program includes the purchase of new cars to replace the present equipment, which was new in the 1920s; replacement of the electrical substations that feed current to the overhead electrical system; the construction of additional substations to assure sufficient power; and changes in the maintenance facilities to handle service and repair work on the new cars. Some changes will be needed at the Randolph Street terminal in Chicago in order to handle the new cars. They will be about seven and one-half feet longer than the present cars, too long to use the existing curved Randolph Street platforms.

In early 1980, ridership increases were the most gratifying development. Despite serious interruptions in service in the first three months of 1979, because of problems with snow shorting out the traction motors on many cars, ridership on the South Shore in 1979 actually exceeded that of 1978. The ridership increase continued in 1980 at an almost alarming pace. Ridership was up over 36%, or approximately 600,000 additional passengers, in 1980 compared to 1979.

Reasons for increased patronage are not too hard to find. The rising price of gasoline and the high cost of parking in Chicago meant that using the South Shore to commute back and forth to work or to shop was much more economical than any of the alternatives. Patronage continued to grow at a rate that should show about 400,000 additional riders in 1981 over 1980. Without the service interruptions suffered in several previous years as a result of very hard winter weather (the winter of 1979 was the worst of a bad lot of

Continued on pg. 4, col. 3.

Indiana's Business

1981 IN REVIEW

1981 started with the economy in a recovery which proved to be short-lived. As the year progressed, Indiana's business conditions deteriorated. In total, based on preliminary analysis, 1981 was a slight improvement in selected measures over the weak performance of 1980.

UNEMPLOYMENT AND EMPLOYMENT

Indiana's seasonally adjusted unemployment rate rose one half percentage point in December to 11.9%. The national rate also climbed one half percentage point to 8.9%. Both of these are the highest monthly rates recorded by each measure since the Korean War. December also marked the 30th consecutive month in which Indiana's jobless rate was above the national rate. (See **Figure 1**)

For the year, Indiana's unemployment rate dropped from 9.8% in 1980 to 9.6% in 1981. These figures are subject to revision. Last year's decline in the jobless rate was caused not only by a decline in the number of unemployed, but also by a decline in the total size of the state's labor force. Specifically, Indiana's labor force shrunk by 24,000 people in 1981. This was accompanied by a decline of 14,000 employed and a drop of 10,000 in the number of unemployed.

Nonmanufacturing employment in Indiana declined by 20,200 in 1981 following a decline of 24,000 in 1980. Total manufacturing employment in the state leveled off in 1981, dropping a mere 0.2% after a 10.2% decline in 1980. It can be hoped that manufacturing employment bottomed out in 1981. The number of Hoosiers employed in manufacturing in 1981 was at the lowest level since 1975.

PER CAPITA PERSONAL INCOME

Third quarter 1981 nominal per capita personal income in Indiana rose to $9,756 from $8,990 in the third quarter of 1980, an 8.5% increase. The comparable national figure reached $10,605 in the third quarter of 1981, up 10.8% from a year earlier. After adjustment for an inflation rate of 8.3%[1] over this period, real per capita personal income rose only 0.2% in Indiana and 2.3% in the U.S. 1981 makes the 11th consecutive year in which the national per capita personal income has been higher than Indiana's.

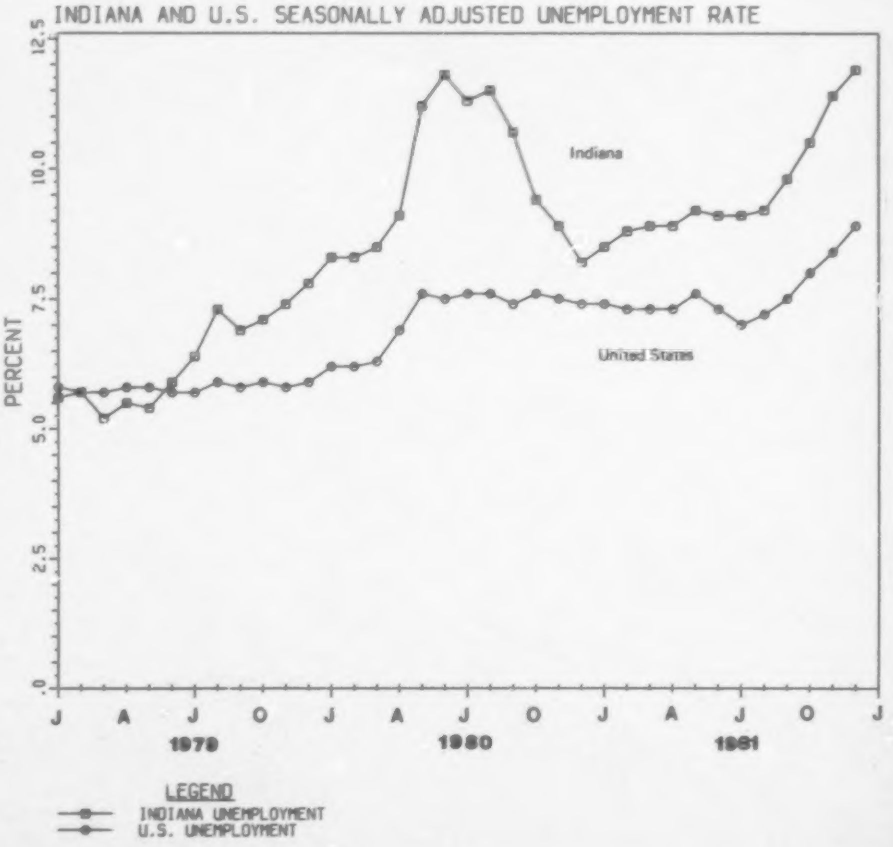
HOUSING STARTS

Last February's review of Indiana's business reported housing starts in 1980 were the lowest recorded in the state since 1960. In 1980, 21,262 new units were started. Last year, 1981, outperformed 1980 by 6.3% with 22,591 new starts. 1981, nonetheless, remains barely half the 1978 figure, whan 42,710 new units were started in Indiana.

CONSTRUCTION SPENDING

Last year's review of 1980 also reported total construction spending, in current dollars, was then at its lowest level since 1976. This dubious honor can now be turned over to construction spending in 1981. For the year, construction spending

Figure 1



in Indiana totalled $2.78 billion, 10.8% below 1980 and only half of the amount spent in 1978, Indiana's peak construction spending year.

Most of the decline in construction spending was due to a dramatic reduction in expenditures for public works and utilities. As can be seen from Figure 2, spending for public works and utilities dropped 21.5% in 1979, 70.5% in 1980, and another 30.5% in 1981.

Residential construction spending improved 4.8% in 1981 compared to 1980. For the year spending totalled $1.03 billion. Nevertheless, residential construction spending remained 36.4% below the $1.6 billion spent in 1979.

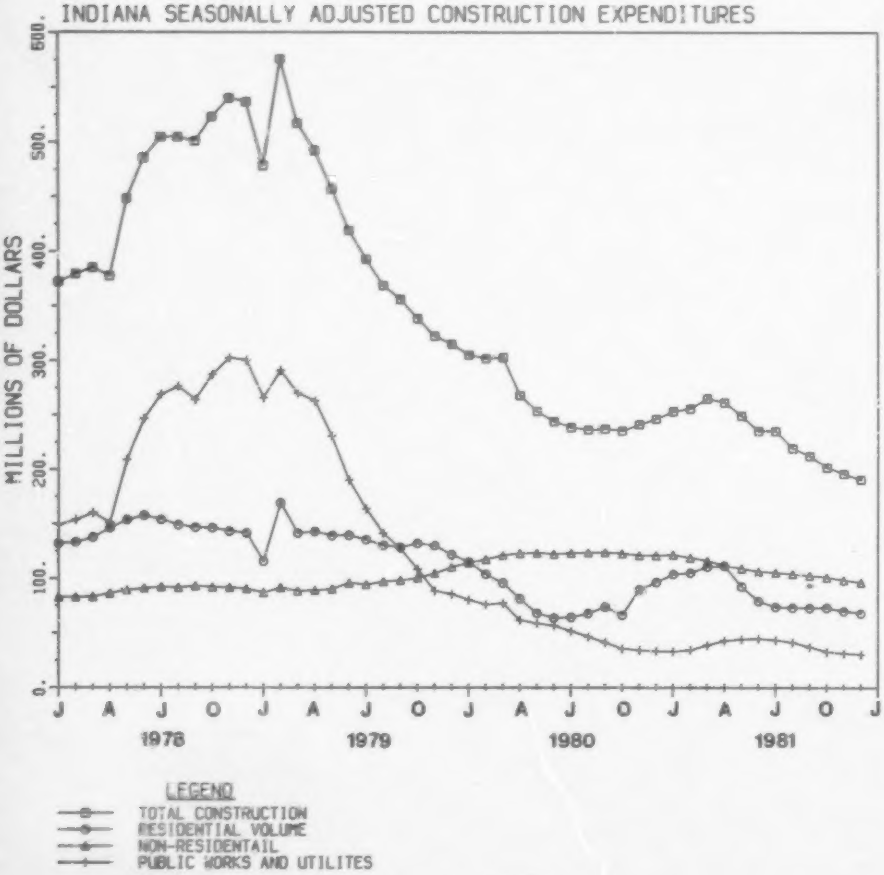
Non-residential construction expenditures increased 27% from 1979 to 1980, and then fell 11.4% in 1981. Therefore, 1981 non-residential spending, though down from the previous year, remained 12.6% above 1979.

CAR REGISTRATIONS

In 1980 total new car registrations in Indiana dropped to their lowest level since 1961. When the December registration figures are released, 1981 could be even worse than 1980. Through November registrations totalled 171,268 in 1981, down 5.5% from the 181,206 registrations in the first eleven months of 1980. In Indiana's peak year for car registrations, 1977, 264,914 registrations were recorded (through November), more than 50% higher than the 1981 figure.

Both domestic and import car registrations were down in 1981. Domestic registrations were 4.8% below 1980 and represent 82% of Indiana's market. Imports captured 18% of Indiana's 1981 market, but had 9.7% fewer registrations than the previous year and 12.2% fewer than 1979.

Figure 2



RAW STEEL PRODUCTION

One of the bright spots in the Indiana economy in 1981 was raw steel production. Indiana's 1981 output of 22.7 million tons exceeded 1980's output of 19.4 million tons by 14.5%. The 1981 figure also nearly matched 1979 steel production of 22.9 million tons. Indiana's share of the nation's raw steel production climbed from 17.8% in 1980 to 18.9% last year and in the last few months of the year was the nation's leading producer of raw steel.

Frank Kushman

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[1] Percentage change in the implicit price deflator for Personal Consumption Expenditures from 1980:3 to 1981:3.

SMERK, CONTINUED

winters), South Shore service was quite dependable through the balance of 1979, all of 1980, and the first half of 1981. Some delays occurring regularly on trains bound for Chicago in the morning rush were due to severe overcrowding on the trains, which slowed the boarding process.

In 1980, NICTD sought bids for the construction of the new commuter cars. Original predictions were that the entire

UNITED STATES-INDIANA BUSINESS INDICATORS*

(Seasonally adjusted indexes unless otherwise noted; base period: 1967 = 100)

	United States				*Indiana*			
	Latest Month		*Previous Month*	*One Year Ago*	*Latest Month*		*Previous Month*	*One Year Ago*
EMPLOYMENT								
Nonagricultural employment	Dec.	138.6	139.1	138.2	Dec.	117.5	117.7	120.8
Manufacturing employment	Dec.	101.7	102.9	103.7	Dec.	87.3	89.2	92.3
Average Weekly hours (No.)†	Dec.	40.0	39.6	40.8	Dec.	39.5	39.3	41.7
Average weekly earnings ($)†	Dec.	330.40	324.32	314.16	Dec.	378.80	375.71	378.64
Nonmanufacturing employment	Dec.	154.1	154.1	152.7	Dec.	138.2	138.2	140.5
Unemployment rate (%)	Dec.	8.9	8.4	7.4	Dec.	11.9	11.4	8.6
Unemployment-Married males (%)	Dec.	5.8	5.1	4.3	–	–	–	–
Continued unemployment claims	–	–	–	–	Dec.	513.1	407.1	411.3
PRODUCTION								
Bituminous coal production	Nov.	156.3	158.8	150.0	–	–	–	–
Industrial electricity production	Sept.	149.2	152.4	147.8	–	–	–	–
Industrial electricity sales	–	–	–	–	Dec.	89.1	150.7	168.3
Manufacturing production	Dec.	141.7	145.1	150.4	Dec.	131.9	142.4	147.1
Raw steel production	–	–	–	–	Dec.	103.1	109.1	139.8
CONSTRUCTION								
Construction activity-total	Nov.	297.3	296.7	302.5	Dec.	169.1	173.8	218.1
Residential housing starts	Dec.	76.1	67.2	119.5	Dec.	92.9	58.7	113.6
Residential expenditures	Nov.	305.7	308.1	376.7	Dec.	193.9	199.5	273.4
Nonresidential expenditures	Nov.	293.2	291.1	266.2	Dec.	195.3	199.3	245.6
Public expenditures	Nov.	207.0	201.1	208.1	–	–	–	–
Public works and utilities	–	–	–	–	Dec.	1034.8	108.3	115.4
OTHER INDICATORS								
Personal income per capita ($)[1]	Nov.	10,776.50	10,723.30	9,873.70	1981:3	9.756.00	9,603.00	8,990.00
Passenger car sales (thousands)†	Dec.	522.0	585.0	640.0	Nov.	11.3	13.7	15.0
Year to date (thousands)	Dec.	8,527.0	8,005.0	8,981.0	Nov.	171.3	160.0	181.2

*Current indicators are preliminary and subject to revision

†Not seasonally adjusted

[1] Indiana's per capita personal income are quarterly data

SOURCES: Data on Indiana construction from McGraw-Hill Information Systems Company; Indiana passenger car registration from R.L. Polk & Co.; indexes of raw steel production for the United States and Indiana courtesy of American Iron and Steel Institute, Washington, D.C.; all other data from U.S. and Indiana government agencies and Division of Research, School of Business, Indiana University.

capital improvement program would cost about $36 million. The bids for enough cars to move 4,500 seated passengers at the peak were well over what had been expected: The Budd Company bid over $40 million for forty-three cars, and Sumitomo Corporation of America bid approximately $39 million for forty-four cars. NICTD decided to cut back on the number of cars to stay within its budget.

In conjunction with its engineering consultants, NICTD sought a simple and robust car that would be speedy, attractive for riders, and easy to maintain. In the fall of 1980, a contract was made with the Sumitomo Corporation of America for the delivery of thirty-six electric commuter rail cars. These cars, which are to be built of stainless steel, are to be eighty-five feet long. They are to be first-rate commuter cars based generally on the design of the so-called Silverliner cars built by the Budd Company for commuter service in the Philadelphia area. All the cars ordered are to be equipped with electric motors.

Despite the satisfaction of finally having the cars on order, the increase in ridership made it clear that there was simply not enough capacity in the thirty-six cars to meet any passenger growth whatsoever. In 1981 many passengers had to stand during the rush hour for rides of considerable distance. Indeed, if the new, higher capacity cars had been in use in the first part of 1981, there would have been capacity to seat only the present rush hour ridership; there would be no capacity for additional patrons.

The need for additional cars is really a need for additional financial support. NICTD worked closely with the 1981 Indiana General Assembly to help solve this problem, and out of that cooperation came an additional source of money. The county taxes collected from the South Shore Railroad will hereinafter revert to NICTD. These taxes amount to $150,000 to $200,000 a year. NICTD also received bonding authority, and the regulatory jurisdiction over the South Shore's rates and service that was formerly vested in the Public Service Commission of Indiana. The plan tentatively developed in the summer of 1981 is for the district to issue bonds and use the receipts to purchase additional cars. The most likely acquisition will be the purchase of eight driving trailers.[2] Negotiations will be carried on with Sumitomo to see whether straight trailers, driving trailers, or, if the price differential is not too great, even more motor cars will be purchased. If the right price can be agreed to, motor cars will be purchased because they will probably never be cheaper. Then, if more cars are needed in the late 1980s, driving trailers will be purchased.

Another project under consideration is a new terminal for the South Shore at South Bend. The Michiana Regional Airport Commission has been building a multimodal terminal at the airport site. In addition to airplanes, the west end of the terminal contains a facility for both intercity bus and local bus service. There is space at the east end of the terminal for the South Shore. A long freight spur from the main line of the South Shore passes to the south of the airport, the track being immediately north of the Bendix plant; it then turns north into and then alongside Bendix Drive. The freight line passes within fifty feet of the airport property. The

INDIANA INDUSTRIAL ELECTRICITY SALES
(Seasonally adjusted in millions of kilowatt hours)

				Percent Change From	
Reporting Cities	*Dec. 1981*	*Nov. 1981*	*Dec. 1980*	*Previous Month*	*One Year Ago*
Anderson	20.6	18.8	22.5	9.6	– 8.4
Bedford	11.0	14.2	16.2	–22.5	–32.1
Bloomington	4.3	4.1	3.1	4.9	38.7
Columbus	15.4	18.5	18.6	–16.8	–17.2
Connersville	7.5	9.6	9.8	–21.9	–23.5
Crawfordsville	10.6	12.1	9.7	–12.4	9.3
East Chicago	22.7	23.5	30.8	– 3.4	–26.3
Elkhart	22.4	21.5	22.3	4.2	0.4
Evansville	41.1	46.7	41.4	–12.0	– 0.7
Fort Wayne	39.8	42.2	45.8	– 5.7	–13.1
Frankfort	8.2	8.9	7.5	– 7.9	9.3
Gary	164.0	141.8	203.6	15.7	–19.4
Goshen	7.9	8.3	8.7	– 4.8	– 9.2
Hammond*	52.5	52.1	57.5	0.8	– 8.7
Huntington	4.3	4.7	5.4	– 8.5	–20.4
Indianapolis	320.1	314.7	315.6	1.7	1.4
Jefferson	5.9	6.0	6.2	– 1.7	– 4.8
Kokomo	57.2	63.3	66.2	– 9.6	–12.6
Lafayette	36.8	39.3	37.1	– 6.4	– 0.8
LaPorte	13.8	14.8	15.1	– 6.8	– 8.6
Logansport	9.5	10.1	8.8	– 5.9	8.0
Madison	2.4	2.5	2.5	– 4.0	–4.0
Marion	25.4	27.9	30.0	– 9.0	–15.3
Michigan City	42.6	43.8	45.2	– 2.7	– 5.8
Muncie	11.8	13.3	17.2	–11.3	–31.4
New Albany	4.7	5.2	5.1	– 9.6	– 7.8
New Castle	6.4	8.6	8.0	–25.6	–20.0
Peru	4.9	5.2	5.5	– 5.8	–10.9
Richmond	22.3	–	21.8	–	2.3
Seymour	2.2	2.5	2.4	–12.0	– 8.3
South Bend	28.1	25.4	27.6	10.6	1.8
Terre Haute	27.4	27.7	30.6	– 1.1	–10.5
Valparaiso	8.7	8.7	–	0.0	–
Vincennes	2.7	3.2	3.8	–15.6	–28.9
Wabash	6.3	8.0	7.4	–21.3	14.9
INDIANA	**1005.3**	**1744.7**	**1397.2**	**–42.4**	**–47.0**

*Continued unemployment claims of East Chicago and Hammond are combined.

Airport Commission already has the funds in hand to build the railroad line across the airport property and into the terminal. The city of South Bend is working on a plan to move the tracks out of the middle of Bendix Drive to the east side of that street and to provide signals at the grade crossings for safety purposes. There are still a number of questions to answer about this project and there is a need for some additional funds to pay the operating cost of running trains into the multimodal terminal. At this time it is still not certain that the South Shore will be extended into the airport.

The South Shore corridor is currently the subject of a marketing study. The study is supported with a grant from the Urban Mass Transportation Administration's Office of Transit Management. This study is aimed not only at the promotion of travel on the South Shore but also includes market research on the tie-ins necessary with local transit services in South Bend, Michigan City, Gary, Hammond, and East Chicago in Indiana, and Hegewisch in Illinois. Ways of encouraging off-peak travel to help balance the levels of traffic on the railroad will also be researched. Much-needed revenue could be gained if more persons would travel during off-peak hours and would make use of otherwise underutilized rolling stock and personnel. The National Lakeshore Park near Michigan City should provide considerable potential for developing off-peak ridership.

Consultants have also recommended the closing of and the rearrangement of some existing stations. Fairly recent studies conducted by the railroad, and by consultants hired by NICTD, show that many stations have generated few or no passengers during a typical day. Those unused stations will be closed. In other cases, stations built in the 1920s will be relocated to meet the needs of the present. For example, thanks to the support of Porter County, a new station will be built to serve the Chesterton area. Proposals suggest that the new station be located approximately midway between two existing stations that are not in convenient locations. The new station will be constructed in the neo-Spanish style of the existing Beverly Shores station. Several stations were built to this design in the 1920s, during the era when Samuel Insull owned the South Shore and several other Chicago area interurban lines, and the design was almost a trademark.

Exciting events lie in the near future. The prototype car from Japan was delivered to Michigan City on January 26, 1982. This car will be tested on the South Shore for several months so that engineers can gain data on its performance. Based on these tests, engineering and design changes will be made before regular production begins. The body shells will be produced by Nippon Sharyo Seizo Kaisha, Ltd. for Sumitomo in Japan and shipped to the United States. At Hornell, New York, the bodies will be assembled and the components produced in the United States will be blended in to form the completed cars.[3]

Several problems that are already obvious to the NICTD trustees are bound to cause some difficulties in the future. Operating aid, always a thorny problem, is likely to grow more so. NICTD has never been able to reimburse the South Shore fully for what the railroad claims are its total operating losses from passenger service. There is a need for larger support from either the state or local levels of government. This problem, already serious, is apt to become worse if the Reagan administration is successful in reducing and then eliminating the operating aid the federal government provides to mass transit operations. In December 1981 NICTD signed an agreement with the South Shore guaranteeing to cover all the railroad's losses from passenger service, plus provide a return on investment. NICTD took jurisdiction over fares and the level of service.

The need to bring revenues more into line with costs was one reason for a fare increase of approximately 60% that took place on April 1, 1981. The South Shore management has suggested that service be curtailed significantly outside of the rush hours and has also suggested elimination of all South Shore passenger service on Saturdays, Sundays, and holidays.

The South Shore petitioned the Interstate Commerce Commission for a 12½% fare increase at the end of July 1981, to become effective at the end of August 1981. That increase was to bring South Shore fares in line with those of the other commuter railroads operating in the Chicago area under the jurisdiction of the Northeastern Illinois Regional Transportation Authority (RTA). The ICC approved the rate increase.

On the other side of the coin, there may also be a call for, and a need for, increased service levels. At the present time, there are only two weekday round trips a day between Chicago and South Bend. If the rail line is extended into the multimodal terminal at South Bend, an increase in service will be necessary to make the investment at all reasonable. It is doubtful that this service will pay for itself completely from fares; as noted earlier, additional operating aid, from one source or another, will be needed.

The means to pay operating costs will not be solved easily. Fares will probably be raised again. Ideally this would come when the public is enjoying the full benefits of the capital improvements. If federal operating aid is reduced or eliminated, the situation will be desperate, indeed, and for current levels of service to be preserved—much less for service increases—more money will have to be forthcoming from state or local resources. NICTD does not have any local taxing powers. The state aid program is now useable only as a match against federal grants. If the service is to continue in any but abbreviated form, either more state funds, local taxing authority for NICTD, or both, will probably be necessary. Fare increases and careful marketing of the service will also be needed.

Many people around the United States and from different parts of the world have viewed the South Shore as an interesting, historical relic of the interurban era. In the future, assuming the problems of covering operating costs are solved, it is apt to be viewed as one of the finest commuter

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railroads in the United States. If this can be achieved—and there is no reason to think that it cannot, given ingenuity and the will to use it—it will be the result of the cooperation between a private company, the Chicago South Shore and South Bend Railroad, and the Northern Indiana Commuter Transportation District. The District, for its part, is the apex of a complicated pyramid of intergovernmental relationships involving two states, four counties, a number of communities, and the federal government. If all goes well, before long Hoosiers will be able to point with pride at The Little Train That Could.

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[1] See Hagi Gil, David Shlay and George M. Smerk, "The South Shore Railroad: Preserving and Improving Commuter Service in Indiana," *Indiana Business Review*, Vol. 53, July-August 1978, pp. 25-28; and George M. Smerk, "South Shore Renaissance," *Indiana Business Review*, Vol. 55, February 1980, pp. 2-9.

[2] A trailer car is one that has no motors but is simply pulled by the other cars. A driving trailer is one that is wired and has control cabs so that a train can be operated from a trailer car even though it is unpowered.

[3] The facilities at Hornell are owned and operated by the General Electric Company. In the early stages of procurement, the NICTD trustees hoped that even if a foreign firm were the successful bidder the cars could be assembled by Pullman at either its Hammond or Chicago works. At about this time Pullman announced its decision to cease building passenger cars.

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Indiana Business Review

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Gerhard Rosseger **Strategic Responses to Import Competition—How Different is Steel? / 2**

Frank Kushman **Indiana's Business / 5**

In this issue . . .

Steel is at the heart of Indiana industry. This state is a leader in its production and use. Professor Larry Davis of IU-Northwest has solicited several articles concerning the industry. This month the views of Professor Gerhard Rosegger of Case Western Reserve University are offered on the steel industry and its response to changes in the competitive environment. Next month, additional articles by Professor Davis and others will continue the discussion.

When will this recession end? Economists are looking for answers to that question. Frank Kushman writes in Indiana's Business that one traditional signal may have been given. Shortly we will know if he is correct.

Being correct is important to the *Indiana Business Review.* Last month a technical error led to a report in these pages that Indiana housing starts for 1981 were better than 1980. When the error was discovered, the IBR was in the mail. To set the record straight: Indiana housing starts in 1981 were down 4.5% from 1980's dismal record. Housing starts in this state have dropped by more than 53% since 1978. With local economic conditions so uncertain, with interest rates at continued high levels, with a slow outward drift of the productive population of the state, the housing industry deserves proper reporting. We regret spreading good news when there was none to offer.

Year	Indiana Housing Starts
1978	42,582
1979	33,799
1980	20,779
1981	19,839

Source: F.W. Dodge Division, McGraw-Hill Information Systems Company.

M.J.M.

Strategic Responses to Import Competition—How Different is Steel?

GERHARD ROSEGGER

Frank Tracy Carlton Professor of Economics, Senior Research Associate, Research Program in Industrial Economics Case Western Reserve University, Cleveland, Ohio

INTRODUCTION

In his classic paper, "Retardation of Industrial Growth," Professor Simon Kuznets (1929) adduced a number of reasons for the stagnation of industries, including the retardation of one nation's industry through the competitive influence of a branch of the same industry emerging later in another country. He did not necessarily see stagnation as a permanent condition but suggested the possibility that after ". . . a fundamental change has taken place, . . . a new era may be said to have begun."

When we move below the aggregates of an industry or of a sector to the level of individual firms, we find of course that decision-makers do not accept the historical drift of an "era" as inevitable, but that they devise strategies for fighting back or at least for making the best of a bad situation. Helmuth V. Moltke, the 19th-century Prussian field marshall, is reputed to have defined *strategy* as "a system of escapes." That is a useful definition in the present context.

The formulation of such strategies takes place in the framework of what I shall call a *strategic regime.* By this I mean: 1. Decision-makers' perceptions of the political, economic, and technological environment in which they are operating. Needless to say, these perceptions may involve what Ericson (1980) has called "a misfit between myth and reality." 2. The existing structure of industry, firms, and plants in terms of such factors as vintage, technology, scale, product mix, location, etc. 3. The ease, or difficulty, of access to financial resources with which to implement major new strategies.

I propose that the period from roughly 1960 through the mid-1970s constituted a strategic regime quite different from that prevailing since then. Below I want to examine briefly how four industries—steel, automobiles, tires, and metal-cutting machine tools—were affected by growing imports during that period, and how they responded to this threat to well-entrenched positions. The focus of attention is the steel industry, with the others providing some bases for comparison.

The search for similarities and dissimilarities among affected branches of the economy is of some interest in light of current national policy discussions. On the one hand, we can observe the traditional rent-seeking activities by individual industries, which have to be based on claims to the uniqueness of each petitioner's position, requiring *special* governmental action. On the other hand, there is the presumption that the benefits of *general* policies (described by buzzwords like "reindustrilization") will fall evenly like snow upon the economic landscape, thus making sectoral measures obsolete.

The findings presented here are compressed from detailed case studies of the sample industries—with all that implies for the apparent casualness of selective evidence. The case studies involved analyses of industry and company statistics, surveys of the relevant business and technical literature, and more or less structured interviews with corporate executives and managers.

SOME COMPARATIVE MEASURES OF IMPACT

The steady penetration of domestic markets by imports in our four sample industries is illustrated by Figure 1. Steel mill products and automobiles led the way in the 1960s, but tire and metal-cutting machine tool imports caught up rapidly during the last decade and continued to grow in the years beyond our survey period. In the case of the latter two industries, and to some extent in automobiles, the competitive impact on American manufacturers was further magnified by direct foreign investment in the United States.

Before we turn to some comparative measures of the effect of these developments, we want to put their economic significance into perspective. Table 1 presents a few general indicators of size. Three of the industries are dominated by large firms, whereas the machine tool industry is comprised mostly of small to medium-size enterprises. All four have in common a heavy concentration of establishments in the North Central and Middle Atlantic states. This fact, combined with differences in import penetration among geographic markets and product categories, means that the economic effects of foreign competition are frequently much greater than is suggested by aggregate industry statistics.

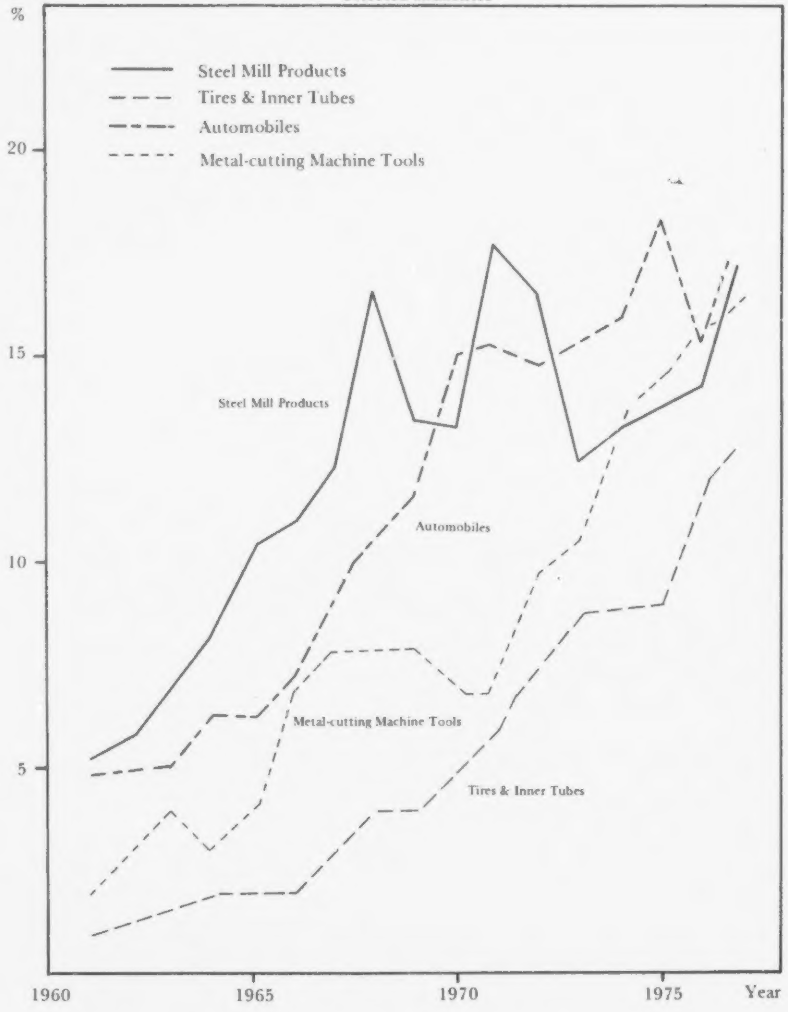
For purposes of comparison, we constructed a number of indexes of impact, standardized to the annual average for the period. Two of these are presented here. They suggest that the four industries have one feature in common: during our survey period the rise of imports was accompanied by stagnation but not by a decline of domestic sectors.

Figure 2 shows the development of the value of shipments, in constant-dollar terms. Each of the industries follows a roughly similar pattern: expansion until approximately 1965 and from then on fluctuations about a more or less horizontal trend. It is worth noting that cyclical swings were much less pronounced in the case of steel than in the other branches, with machine tools—not too surprisingly—showing the widest fluctuations.

This picture of stagnation is further confirmed by Figure 3, which traces the impact on employment, the indicator of greatest public concern. Again we observe much less pronounced fluctuations for steel than for the others. Of course these aggregate data hide a number of interesting stories, such as the effects of plant closings and relocations, as well as changes in the structure of the labor force.

It does not follow from this evidence that the domestic industries would have had either the capacity (in quantitative or

Figure 1
Imports as Percent of Domestic Supply, 1961–76
Selected Industries



Sources: *Survey of Current Business;*
AISI, *Annual Statistical Report;*
MTBA, *1979/1980 Economic Handbook.*

NOTE: Unless otherwise indicated, data shown in diagrams are based on calculations derived on statistical series in U.S. Department of Commerce, *Annual Survey of Manufactures, Industry Profiles* (Washington, D.C., U.S. Government Printing Office).

qualitative terms) or the right products with which to capitalize on the market growth apparently captured by imports. The point would hardly be worth making, were [illegible] not for the fact that arguments for special protection have been so frequently based on the, at least implicit, assumption that import-competing industries are playing a zero-sum game against their foreign rivals. In spite of all the carefully worked-out econometric models, the only safe thing we can say is that we do not know what *would have* happened to these industries' revenues, had it not been for import competition. Although jobs were obviously lost to imports at the margin, we should also remind the parties concerned that calculations of how many jobs *might have been* gained in the absence of imports make for an unconvincing argument.

RECOGNITION OF MARKET THREATS

Perceptions and expectations, whether justified by the wisdom of hindsight or not, make up important elements of a strategic regime. For our purposes, the recognition of the seriousness of threats posed by imports and interpretations of the bases for such threats by decision-makers play an especially significant role in eliciting strategic responses.

There are some striking similarities in the ways in which firms in our sample industries reacted to the growing inroads of foreign products. To divide these reactions into phases is something of an artifice, but this procedure enables us to point to considerable differences in the *speed* with which decision-makers responded. A few benchmarks must suffice to tell the story.[1]

For want of a better term, I shall call the first phase "the changed world economy" explanation. The revival of Western Europe and the growth of Japan's industrial power were seen as leading quite naturally to increased worldwide competition, with some of it spilling over into U.S. markets. But these inroads were given no greater significance than were other competitive challenges, such as those from substitute products. Even more important, the tenor of these assessments was that opportunities for the growth of American exports would more than offset whatever small footholds imports might gain. In the steel industry, this was essentially the position in the late 1950s and very early 1960s. The general tone of *The Competitive Challenge to Steel* (AISI, 1961) provides a good illustration. In the other industries, this interpretation persisted well into the sixties, buoyed in some cases (especially in machine tools) by a satisfactory export performance in connection with U.S. foreign assistance programs.

In the steel industry, it was quickly conceded that imports might do especially well in the markets for low-priced products, such as reinforcing bars, wire and wire manufactures, but the only inference drawn was that this development ought to stimulate efforts to export more of the sophisticated products. The "low end of the market" interpretation persisted well into the 1970s in the case of metal-cutting machine tools; domestic manufacturers felt quite secure in what was then considered the "high-technology" segment. The persistence of this myth in the face of overwhelming evidence to the contrary is puzzling; as late as January 1980 the chief operating officer of a large firm claimed that much of the import business is in "standard tool room equipment, not in the more sophisticated production machinery." Meanwhile, many foreign producers actually managed to leap-frog into entirely new areas of technology.

The view that automotive imports occupied at best pockets of fringe demand and were not worthy of an all-out strategic response also appears to have dominated the domestic industry's attitudes. Certainly the bulk of all foreign cars was sold in the low-price range, with mark-ups that made them seemingly uninteresting to manufacturers as well as retailers.

The "fringe demand" view prevailed in the tire industry, too, albeit with one difference: import penetration was based on a major product innovation, the belted radial-ply tire, pioneered by Michelin, a French firm. It was higher-priced than domestic (bias-ply) tires and was regarded as a suitable replacement tire for imported cars only. As long as American firms had an exclusive hold on the domestic original-equipment market, they also expected to maintain their position in the more profitable replacement market for American-made automobiles.

Hindsight always beats foresight. The point of reviewing these perceptions is not to show how wrong decision-makers were but to suggest the prevalence of similar assessments across a range of industries. Steel, however, once again led the way

Continued on p. 6, col. 3

Table 1
Selected Industry Performance Data, 1976

INDUSTRY	*Value Of Shipments (Million $)*	*Value Added (Million $)*	*Employment*	
			Total	*Production Workers*
Motor vehicles and parts	95,381.5	30,948.4	661.8	797.1
Steel mill products	39,684.1	14,755.5	358.0	451.9
Tires & inner tubes	7,713.9	3,533.7	78.8	103.9
Metal-cutting machine tools	2,496.2	1,664.1	37.6	58.1

Source: U.S. Department of Commerce, *Annual Survey of Manufactures, Industry Profiles*, (Washington, D.C.: U.S. Government Printing Office, 1978).

Indiana's Business

An economic recession brings with it a search for its low point. Average weekly hours in manufacturing production often provide a signal of economic upturns. Historically in Indiana, three or four months after average weekly hours reaches its low point, manufacturing employment begins a turnaround even though it may have continued to fall during the intervening months.

In January of this year average weekly hours fell to 38.5, under 39.0 for only the eighth time since 1950. (See Table 1). In six of the previous seven cases, average weekly hours immediately began climbing in the following month. In all seven previous cases hours regained a 40.0 hours week level or better within the same calendar year. Table 1 shows that in each of these seven cases manufacturing employment reached its low point three or four months later. In the last two cases the lag was even shorter. In this recession, manufacturing employment has dropped steadily from 668,800 in September 1981 to 617,200 this January.

Low points of average weekly hours in the 1970s and 1980s have been accompanied by a peak in continued unemployment claims. In March 1975 continued unemployment claims peaked at 558,000 and then dropped steadily to under 200,000 by November. In February 1977, one month after average weekly hours reached a low point, claims peaked at 281,000 and then dropped back under 200,000 in two months. In July 1980, claims peaked at 513,000. Most recently, claims have climbed from 221,000 in October to 455,000 in January.

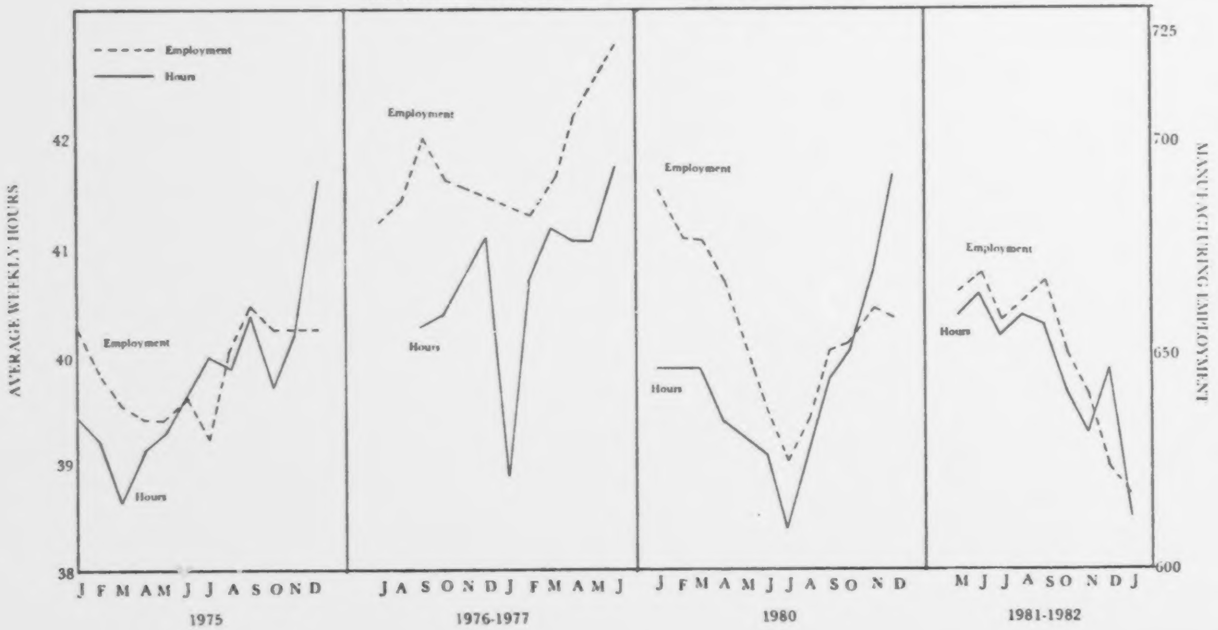
As an economic indicator, Indiana average weekly hours seem to be providing a signal consistent with the national economic forecasts that call for an upturn to commence in April or May of this year. It would be welcome news if the January figure is the low point for this recession and an upturn in employment can be anticipated in the next few months.

Frank Kushman

Table 1

Average weekly hours under 39.0	Low Point for Manufacturing Employment	Lag in Months
April 1954	August 1954	4
January 1958	May 1958	4
February 1958	May 1958	3
November 1960	March 1961	4
March 1975	July 1975	4
January 1977	February 1977	1
July 1980	July 1980	0
January 1982	?	?

WEEKLY HOURS AND MANUFACTURING EMPLOYMENT TRENDS



INDIANA INDUSTRIAL ELECTRICITY SALES
(in millions of kilowatt hours)

Reporting Cities	Jan. 1982	Dec. 1981	Jan. 1981	Percent Change From Previous Month	Percent Change From One Year Ago
Anderson	21.4	20.6	21.9	3.9	– 2.3
Bedford	11.5	11.0	12.3	4.5	– 6.5
Bloomington	3.9	4.3	2.8	– 9.3	39.3
Columbus	16.7	15.4	16.2	8.4	3.1
Connersville	6.1	7.5	8.6	–18.7	–29.1
Crawfordsville	10.7	10.6	9.7	0.9	10.3
East Chicago	22.9	22.7	32.6	0.9	–29.8
Elkhart	20.7	22.4	20.5	– 7.6	1.0
Evansville	38.7	41.1	41.8	– 5.8	– 7.4
Fort Wayne	40.2	39.8	41.8	1.0	– 3.8
Frankfort	7.9	8.2	7.7	– 3.7	2.6
Gary	192.3	164.0	210.7	17.3	– 8.7
Goshen	7.7	7.9	8.2	– 2.5	– 6.1
Hammond*	50.7	52.5	60.3	– 3.4	–15.9
Huntington	4.6	4.3	4.8	7.0	– 4.2
Indianapolis	319.2	320.1	331.3	– 0.3	– 3.7
Jefferson	5.5	5.9	6.3	– 6.8	–12.7
Kokomo	62.4	57.2	59.4	9.1	5.1
Lafayette	36.1	36.8	33.9	– 1.9	6.5
LaPorte	13.5	13.8	14.6	– 2.2	– 7.5
Logansport	9.9	9.5	10.5	4.2	– 5.7
Madison	2.5	2.4	2.0	4.2	25.0
Marion	25.6	25.4	26.6	0.8	– 3.8
Michigan City	42.9	42.6	43.5	0.7	– 1.4
Muncie	12.6	11.8	17.8	6.8	–29.2
New Albany	5.0	4.7	4.6	6.4	8.7
New Castle	7.2	6.4	5.6	12.5	28.6
Peru	5.0	4.9	5.6	2.0	–10.7
Richmond	23.3	22.3	24.4	4.5	– 4.5
Seymour	2.4	2.2	2.3	9.1	4.3
South Bend	22.0	28.1	22.6	–21.7	– 2.7
Terre Haute	27.2	27.4	30.0	– 0.7	– 9.3
Valparaiso	8.0	8.7	8.0	– 8.0	0.0
Vincennes	2.8	2.7	2.8	3.7	0.0
Wabash	5.6	6.3	5.1	–11.1	9.8
INDIANA	1734.8	1005.3	1877.9	72.6	– 7.6

*Continued unemployment claims of East Chicago and Hammond are combined.

Rosseger, continued

toward a more sober evaluation of developments. By the mid-sixties, the continuing growth of imports was interpreted mainly in terms of a worldwide expansion of capacity, beyond current levels of demand (AISI, 1963). The vulnerability of the U.S. industry to important competition in an ever-increasing array of products was seen as a result of (a) the ability of foreign producers to gain market share during periods of peak demand, and (b) their willingness to cling to these positions during downturns, aided by export subsidies and low U.S. tariffs. All sanguine expectations about compensating expansions of American exports had apparently been abandoned, in the face of barriers posed by low wages and protectionist policies abroad.

By the end of the 1960s, the industry had raised the steel import problem to the level of a "national concern" (AISI, 1970). By this time, even the belief in a fundamental technological superiority of American steel plants was beginning to yield to a more realistic assessment, albeit grudgingly: "The steel industry in the United States still enjoys an overall technological advantage. The margin of advantage has been shrinking steadily, however" (AISI, 1970, p. 36).

Whatever the merits of this appraisal, industry concerns were largely set aside during the steel boom of 1973-74. Indeed, market developments, together with the effects of governmental intervention, produced an optimism that was premature but perhaps not entirely unjustified. With due allowance for the occasion, the following remarks were made at an annual meeting of the American Iron and Steel Institute by an industry spokesman: "We showed the doubting Thomases back in the early sixties that the 'old giant' was far from 'finished,'—we came roaring into the seventies, rarin' to go," and " . . . in spite of disappointing earnings we found money to revitalize our companies and our industry, and today it's paying dividends" (Foy, 1975).

Let us turn to the other industries. The desperate story of automobiles needs little

UNITED STATES-INDIANA BUSINESS INDICATORS*

(Seasonally adjusted indexes unless otherwise noted; base period: 1967 = 100)

	United States				*Indiana*			
	Latest Month		*Previous Month*	*One Year Ago*	*Latest Month*		*Previous Month*	*One Year Ago*
EMPLOYMENT								
Nonagricultural employment	Jan.	138.1	138.5	138.5	Jan.	117.0	117.2	120.7
Manufacturing employment	Jan.	100.5	101.6	103.7	Jan.	87.1	87.5	92.8
Average Weekly hours (No.)†	Jan.	36.8	39.9	39.9	Jan.	38.5	39.9	40.6
Average weekly earnings ($)†	Jan.	308.38	329.18	308.43	Jan.	374.60	384.64	369.05
Nonmanufacturing employment	Jan.	154.3	153.9	153.4	Jan.	137.4	137.7	139.8
Unemployment rate (%)	Jan.	8.5	8.8	7.4	Jan.	12.5	11.9	8.5
Unemployment-Married males (%)	Jan.	5.3	5.7	4.2	–	–	–	–
Continued unemployment claims	–	–	–	–	Jan.	371.9	513.1	318.5
PRODUCTION								
Bituminous coal production	Dec.	152.0	156.3	163.2	–	–	–	–
Industrial electricity production	Oct.	145.0	149.2	146.0	–	–	–	–
Industrial electricity sales	–	–	–	–	Jan.	154.9	89.1	165.2
Manufacturing production	Jan.	137.1	141.9	151.1	Jan.	139.2	131.9	150.5
Raw steel production	Jan.	75.4	75.6	103.2	Jan.	99.8	103.1	141.3
CONSTRUCTION								
Construction activity-total	Dec.	296.0	299.0	316.9	Jan.	169.3	169.1	224.5
Residential housing starts	Jan.	69.6	70.0	123.4	Jan.	50.4	63.2	140.0
Residential expenditures	Dec.	310.8	307.7	389.6	Jan.	192.2	193.9	297.3
Nonresidential expenditures	Dec.	288.8	294.7	281.4	Jan.	194.0	195.3	246.8
Public expenditures	Dec.	202.7	204.2	224.3	–	–	–	–
Public works and utilities	–	–	–	–	Jan.	106.3	104.8	114.0
OTHER INDICATORS								
Personal income per capita ($)[1]	Nov.	10,795.50	10,728.50	9,873.70	81:3	9.756.00	9,603.00	8.990.00
Passenger car sales (thousands)†	Jan.	535.0	523.0	648.0	Dec.	9.30	11.32	12.60
Year to date (thousands)	Jan.	535.0	8,536.0	648.0	Dec.	180.57	171.27	193.81

*Current indicators are preliminary and subject to revision

†Not seasonally adjusted

[1] Indiana's per capita personal income are quarterly data

SOURCES: Data on Indiana construction from McGraw-Hill Information Systems Company; Indiana passenger car registration from R.L. Polk & Co.; indexes of raw steel production for the United States and Indiana courtesy of American Iron and Steel Institute, Washington, D.C.; all other data from U.S. and Indiana government agencies and Division of Research, School of Business, Indiana University.

Correction: February's IBR incorrectly reported Indiana housing starts index for December as 92.9. The correct index is 63.2.

1980 CENSUS DATA AVAILABLE

The State Data Center has received parts A and B of Summary Tape File 1. The Data Center at the State Library has printouts of all 59 tables from STF1A for the state, counties and places, as well as township data from proofs of the PHC (3) report *Summary Characteristics for Governmental Units* (Tables 1 and 2, which have broad population and housing categories). The Affiliate Data Centers around the state have, or will be receiving, state, county and place data in printout form from STF1A for their regions, as well as a copy of the PHC (3) report. We should be receiving Summary Tape File 2 (which will contain the same 100% count data as STF1, but with more detailed cross-tabulations) in late spring. Sample data (in the form of STF3) is not expected until late summer or even early fall. For further information on accessing information from the Summary Tapes, obtaining photostats from the printouts, or other services of the State Data Center, write or call:

Phone: (317) 232-3735 or (317) 232-3733

Indiana State Data Center
Indiana State Library
140 N. Senate Ave.
Indianapolis, IN 46204

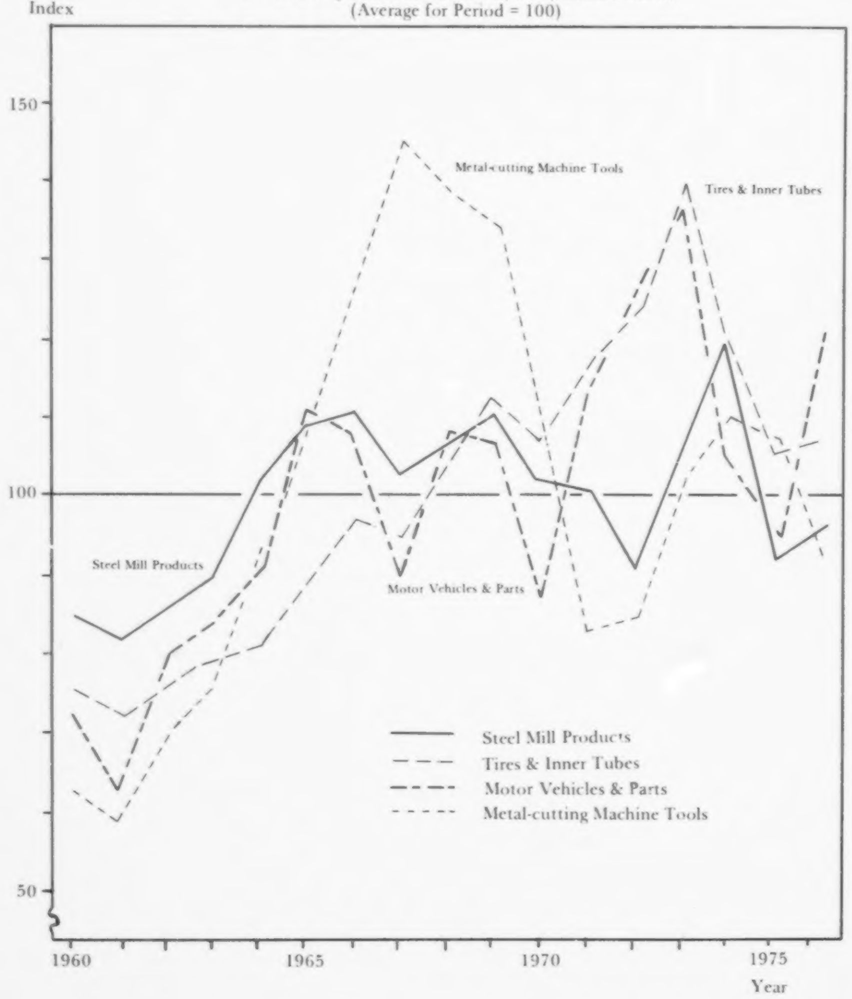
comment. The industry's basic problems have extended well into the current strategic regime, as evidenced by the following expert assessment: "I'm optimistic . . . because we're developing product lines that will soon be competitive internationally . . . Another reason I'm optimistic for the American automotive industry is that we're looking at complete obsolescence by 1985," and "I believe our basic technology is every bit as good as the foreign manufacturers' . . ." (Cole, 1980).

The machine tool industry continued to exhibit a peculiar indifference to the import threat. Perhaps the fact that decision-makers were accustomed to wide cyclical swings in business obscured the threat. Perhaps the representative (small to medium-size) firm's perspective on its particular market militated against a concern with industry-wide strategic matters. In any event, we observe continuing efforts by the head of the industry's trade association to call his widely dispersed members' attention to the growing impact of foreign competition (e.g., Gray, 1979). But this is a partial explanation, at best. The big firms also seem to have felt secure in their alleged superiority in the market for sophisticated, production-type tools, while foreign innovators had in fact extended the technological frontiers to robotization and to the development of integrated machining centers. Thus the comment by an expert: "Where (these innovations) have been carried out, the results have been startling. Unfortunately, we must look beyond our shores for the best examples." (Wisnosky, 1980).

The awakening of the tire industry occured, in rude fashion, in the early 1970s. It came when the Ford Motor Company announced its decision to put the '71 Lincoln Continental on radial tires (supplied by Michelin) and then committed itself to radials for most of its '74 model line. General Motors followed suit. From satisfying a "fringe demand" in the replacement market, foreign manufacturers had moved into the supposedly unassailable original-equipment business. The pioneer, Michelin, established production facilities in the United States, a development met with a somewhat puzzling statement by the president of one of the large domestic tire makers. He welcomed the direct foreign investment, because " . . . that should ease the import threat" (*Industry Week*, 1973). However, in an interview the chief executive of another firm conceded, "I guess we sat on our hands too long."

All in all, it seems fair to conclude that the steel industry was well ahead of the others in recognizing the full impact of import competition and in overcoming the myth of American technological superiority. The collapse of that myth probably had the useful effect of focusing industry

Figure 2
Value of Shipments, In Constant (1967) Dollars Index,
(Average for Period = 100)



attention on alternatives to the (narrowly defined) "best-practice" approach to competitive upgrading. For as Hans Mueller (1980) has correctly suggested, the potential benefits of that approach can be overplayed. Our own empirical analyses (Gold *et al.*, 1980) lend support to this suggestion.

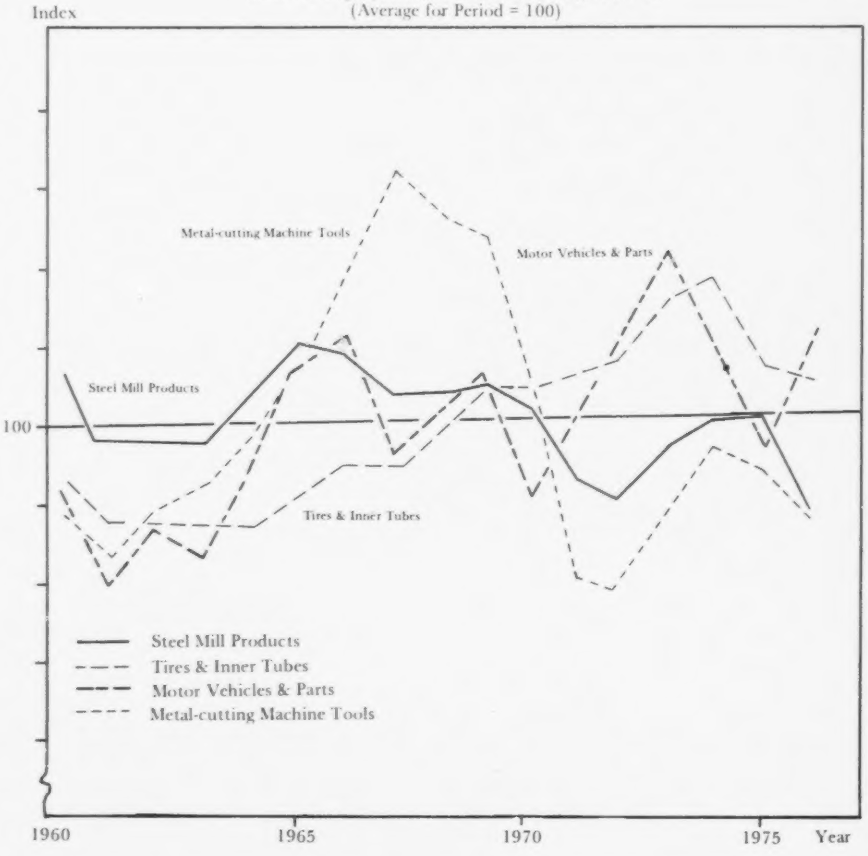
PATTERNS OF STRATEGIC RESPONSE

A detailed review of corporate strategies, as identified in our case studies, would go well beyond the scope of this paper. Therefore, I shall restrict myself to some observations on three general areas—technological innovation, capital formation, and structural change, and to a few comments on apparent obstacles to the development of effective strategies.

The steel industry's receptiveness to technological opportunities has been the subject of a vast literature. Economic analysts wax ecstatic over the chance to measure diffusion rates, to compare vintage structures, and to correlate cost competitiveness with the adoption of individual innovations. It would appear that, by now, three lessons should have emerged from these studies: (a) The piecemeal introduction of even major process innovations into existing production systems rarely brings the cost benefits claimed for such innovations *in abstracto;* (b) there is little apparent correlation between "innovativeness," however measured, and a firm's profitability; and (c) no general, industry-wide expectations about the effects of innovations on competitiveness can be formed, without attention to the specific structure, product mix, and markets of individual firms. It is a fact that capital shortages and other constraints have often forced firms into "making do" with existing facilities and to look elsewhere for improvements in productivity and profitability, and that many of them have done quite well on this less spectacular and less easily measurable path. To observe this is not to deny the importance of technological "up-to-dateness," but to suggest that innovativeness *per se* is not a nostrum that assures competitiveness (Gold *et al.*, 1980).

The speed (or tardiness) of an industry in meeting foreign competition is more easily judged in situations involving more or less straightforward product innovations. Thus, the tire industry's efforts to convert to radial tire production in the early seventies reflect a frantic catching-up with changed market demand. The story of the change-over, which required entirely new process equipment and operating practices, is complex and involved a number of false starts and technological dead ends. The following figures illustrate the magnitude of the adaptation: In 1971, radial tires accounted for 5 percent of the original-equipment market; by 1979, they had a 77 percent share. In the replacement market, the share of radials increased from 20 to 47 percent over the same period (Standard & Poor, 1980). The effects of this

Figure 3
Index of Employment, Selected Industries, 1961–76
(Average for Period = 100)



technological bootstrap operation on the industry are in sharp contrast to steel: large chunks of traditional capacity became obsolete, and the tire makers' return on investment dropped by more than 70 percent over the years of change-over.

In the case of metal-cutting machine tools, rising imports provoked nothing like this kind of massive response. In fact, sales of foreign-made, advanced machine tools grew steadily and increasing numbers of foreign firms began to establish assembly and manufacturing facilities in the United States. There are some notable exceptions, of course, but the comments of one foreign supplier are indicative of the situation: "We put a lot of emphasis on our more sophisticated machines, because we really have little if any competition from domestic suppliers" (*Iron Age*, 1979). Meanwhile, such countries as Korea, Taiwan and India have become exporters of simple, standard machine tools.

It does not seem unfair to judge that the industry finds itself roughly in the position steel confronted in the mid-sixties; however, there are few signs of a concerted effort to fight back. Whatever technological advantages American manufacturers may have enjoyed continue to be eroded (Department of Commerce, 1979, p. 236). Given the fact that the typical firm does not have the resources to engage in extensive R&D efforts, one might expect that cooperation with foreign producers provides an alternative strategy. But little of that has occured, and perhaps the spokesman for a Japanese company explains why: "We did consider establishing licensing arrangements with a U.S. builder but we weren't able to come to anything satisfactory. The U.S. machine tool builders are too shortsighted and too profit conscious" (*Iron Age*, 1979).

The steel industry has made the need for continuing injections of large amounts of capital the linchpin in its pleas for protection and for the reform of tax policies. Therefore it is interesting to check how its past rate of investment compares with that of the other industries which have had to play catch-up to foreign competition. Figure 4 shows annual capital expenditures as percentages of sales for our sample industries. It will be seen that steel led the group for most of the period, being surpassed only by the tire industry during the latter's "crash program" of the early seventies. The motor vehicle and machine tool branches ranked well below these two throughout these years.

This sanguine observation about steel's (relative) leadership in investment must, of course, be tempered by two considerations. First, we know that substantial portions of capital expenditures did nothing to enhance productivity, profitability, or competitiveness but went to environmental control facilities. Second, we do not know with any accuracy how much of firms' cash flow from steel operations was invested elsewhere, in pursuit of a strategy of diversification into non-steel activities.

Such fundamental structural changes in import-competing industries are only partly the result of deliberate decisions by existing firms. Perhaps the most interesting fact about steel is that a period in which large, integrated firms tried to shrink themselves into better health by shutting down marginal plants and abandoning marginal product lines, also saw the entry of many new firms, the mini-mills, into a depressed market. Explanations for this development must be sought primarily in geographic and product-specific factors; nevertheless, it suggests that there was room for aggressive domestic competitors even at a time when growing imports seemed to offer little in the way of incentives for entry.

The changes which resulted from the tire industry's response to import competition can be best summarized by the observation that as of 1980 no more passenger-car tires were being manufactured in the historical "tire capital," Akron. Shrinkages of operational (as against book) capacity were accompanied by massive relocations of plants. The age and layout of existing facilities, as well as a desire to get away from restrictive union work rules, explain this strategy. While the large firms struggled to adjust themselves to a rapidly changing market, several of the smaller ones fell into serious difficulties, with at least one bankruptcy reported. In addition to the wholesale renewal of passenger-tire capacity, the "Big Five" also moved toward increasing diversification. By 1978, only Goodyear derived more than 80 percent of its income from tire sales, whereas the others derived less than 50 percent of their revenues from tires.

An assessment of structural changes in the metal-cutting tool industry is difficult because of a lack of up-to-date statistics. We do know, however, that there has taken place a shrinkage in the number of establishments from their 1967 peak of over 900; more significantly, those with 20 or more employees declined from 338 in 1967 to 275 in 1972 (MTBA, 1979). Total industry capacity has been shrinking steadily since the 1950s. Turnover of small firms is quite rapid, and so the above figures are only suggestive of changed market conditions. As indicated earlier, the most significant structural changes may be expected to result from growing direct foreign investment in the United States. Overseas manufacturers find cost conditions reasonably attractive and have an incentive for locating production close to their customers, in order to meet specific requirements for technologically advanced equipment.

I have attempted elsewhere (Rosegger, 1981) to sort out how much the economic and political environment contributed to these generally discouraging developments, in addition to the affected firms' own strategies. Here I want to make just two observations. The first has to do with the growing obstacles to technological effort and new investment. Among these one could list the role of labor unions, the increasing uncertainty surrounding the cost and completion time of major capital projections, the strictures imposed on inter-firm cooperation by antitrust rules, and the prospect that, whatever efforts American industries make, foreign governments will enable their key industries to compete in the United States, in the interests of maintaining politically desirable levels of employment. My second observation concerns the much-lamented influence of capital market attitudes on the strategic decisions of firms: to the extent that near-term return on investment is stressed as *the* criterion for the allocation of scarce funds, decision-makers will have a strong incentive to prefer technological tinkering and incremental projects to major undertakings. Further, to the extent that governmental policies—or uncertainty about the direction of future policies—increase the tendency of managements to look no further than to the next annual report, we would expect basic innovations to remain on the back burner until their adoption becomes a purely defensive measure and not a means of getting a competitive edge in domestic and foreign markets.

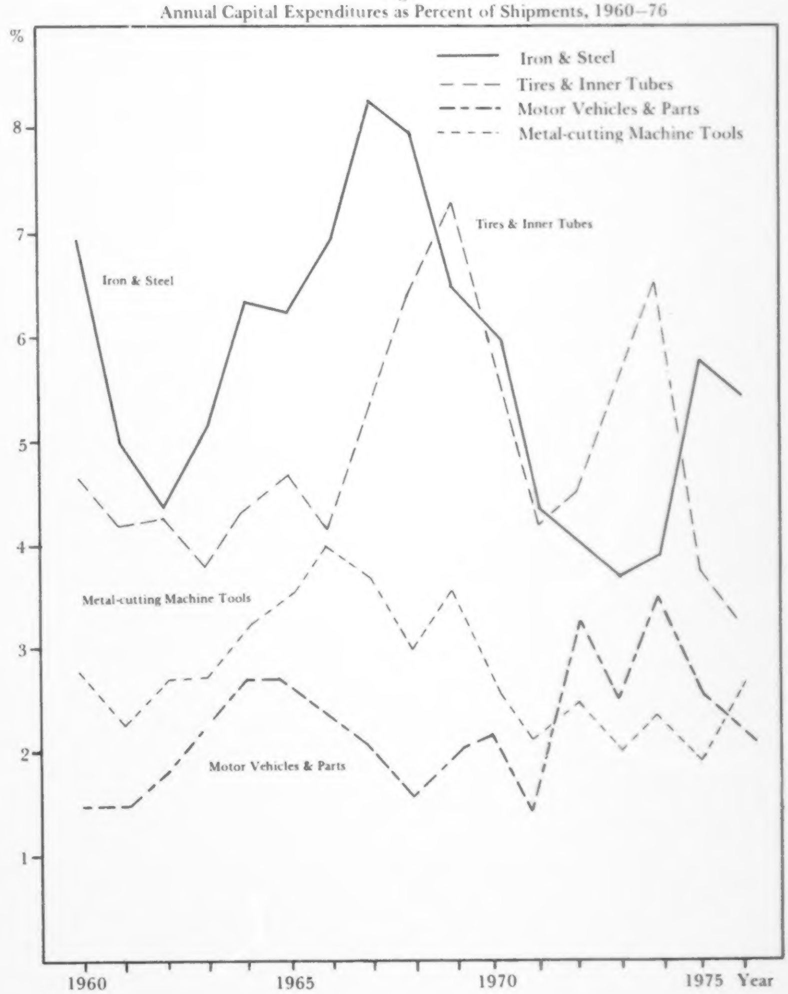
SOME CONCLUDING OBSERVATIONS

Our brief comparison of steel with three other import-competing industries hardly permits any sweeping generalizations. However, since steel decision-makers so frequently have been berated for their failure to respond aggressively to import competition and for their alleged laggardness in technological innovation, our case studies at least permit us to redress the balance: the industry surely did no worse, and probably did a lot better, than the other three sectors in the timely recognition of a market threat and in the development of appropriate strategies. That these strategies included pleas for assistance from Washington is hardly surprising.

Despite a number of handicaps, some external and some self-imposed, the industry appears to have weathered the previous strategic regime's storms in better fashion than the other sectors in our sample. Setting to one side such imponderables as foreign government policies and exchange-rate developments, we may expect that the industry's integrated firms (and certainly the mini-mills) will be able to hold their own against foreign competitors, at least in certain markets and certain product lines. Whether steel will be able to capitalize on its relative strengths and improve its position, remains to be seen. Even such a cautious assessment is more than one would have dared make ten or fifteen years ago.

This paper is a byproduct of a broader investigation of the role of technological changes in the competitiveness of several U.S. Industries, conducted under the leadership of Professor Bela Gold, Director, Research Program in Industrial Economics. Part of the work was supported by a grant

Figure 4
Annual Capital Expenditures as Percent of Shipments, 1960–76



from the National Science Foundation; however, the findings and opinions presented do not necessarily reflect the views of the Foundation. An earlier version of the paper was presented at the Twelfth Atlantic Economics Conference, New York City, October 8-11, 1981.

[1] In identifying these phases, we have relied heavily on published statements and interviews. This approach raises the question whether spokesmen really believed what they said. Our skepticism is allayed only by the fact that, in general, the historical evidence suggests that they also acted as though they believed it.

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Reindustrialization of the Steel Industry in Northwest Indiana

In this issue ▪ ▪ ▪

Last month this *Review* carried an analysis of the challenge of imports to the steel industry. This issue continues with three additional articles secured by Professor Larry Davis of Indiana University-Northwest for the IBR. Professor Davis himself offers an examination of the issues facing steel in the U.S. A perspective from the industry is offered by Lon Doty and an analysis of the role of steel in Northwest Indiana is detailed by Professor Leslie Singer of Indiana University-Northwest.

Two articles appear in Indiana's Business, our section on the state economy. Frank Kushman traces the current (or recently concluded) recession in manufacturing. He demonstrates the strong differential impact on Indiana's manufacturing industries. Joel Webster offers a longer view which places the current recession in perspective. He shows the diversity of manufacturing performance within the state. Reading all these articles together, one can see the overall impact steel has on the state's aggregate condition.

Morton J. Marcus,
Editor

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D. LARRY DAVIS

Associate Professor of Economics, Indiana University-Northwest

U.S. steelmaking is in a slow growth period faced with severe foreign competition, and the reindustrialization programs of the Reagan Administration should be beneficial for the steel industry. In particular, survival of the U.S. steel industry can best be served by continual retrenching toward the Great Lakes. Thus, the reindustrialization program of the current Administration should have a beneficial impact on the economy of the Northwest Indiana.

Historically, my assessment is that the steel industry is a declining industry in the Northwest Indiana economy. The 1973-75 recession marked the turning period for the industry (see Davis).[1] Robert Crandall and others[2] tend to agree with this assessment and mark the year 1977 as the major turning point for the U.S. steel industry (see Crandall).[3]

In the period from 1978-79 the steel industry reduced its capacity by more than 5 percent, or 8.5 million tons. Future reductions may be another 17 million tons (see Crandall).

The reaction of the declining industry and its resulting impact on the economy, especially in the Northwest Indiana area, has been to adopt the essential ingredients of the Solomon plan. The Solomon plan was developed by Anthony Solomon, U.S. Secretary of the Treasury for Monetary Affairs during the 1969-1974 period. The plan was adopted by the Carter Administration and carried through by the Reagan Administration. It established trigger-pricing based on the cost of production in the world's most efficient steel industry, Japan.

In the world economies the response was echoed in the Davignon plan. The Davignon plan is a European plan that began during the 1977-78 crisis. It provides for import reference prices, domestic guidance prices, and phased reductions of steel making capacity in European markets. It sharply reduces Japan's exports to the European community and restrains selling to the U.S. market.

Each of these plans was designed to assist the U.S. steel industry in becoming more competitive, to slow the decline of U.S. steel industry employment, and to maintain international stability in the world steel markets.

The implementation of the Solomon plan is referred to as the "Reindustrialization of the Steel Industry" in this article. The essence of this plan is that capital formation, employment stability, and potential growth may be generated with investment incentives and trade protection. Both policies, adopted by the Carter and Reagan Administrations, are designed to support the declining steel industry. Competitive advantage to the steel industry can be increased by reinforcing regional comparative advantages and advantages of scale economies which exist in the Great Lakes region. These policies should benefit the Northwest Indiana economy in the short run and in the long run as we move from the contraction phase of this current recession. The recovery, however, is likely to be relatively slow and employment recalls will not be for all workers previously laid-off.

Ultimately, the survival of the steel industry means retrenching, with capital formation, and strong incentives to improve productivity of the steel workers in the Great Lakes region.

My view is cautiously optimistic that the steel industry will survive the very treacherous period of the 1980s, and survival will occur only as labor, management, and government work cooperatively to face the reality of the noncompetitive steel producing of the U.S. industry. The industry must be able to find ways to avoid noncompetitive legislation to protect the industry, such as the "triggering mechanism." The ultimate survival of the U.S. steel industry is dependent on long-run mechanisms to increase the efficiency of the industry and make the product price-competitive.

Policies such as the continued use of the Steel Committee within the Organiza-

Continued on page 9, col. 1

Industry's View: Reindustrialization of Indiana's Steel Industry

LON DOTY

Former Vice President and General Manager, Midwest Steel, now Executive Vice President of National Pipe and Tube Company

The Calumet region of Northern Indiana consisting of Lake and Porter Counties produces approximately 17 percent of the nation's steel output. Five major steel corporations have mills in this area. They are; Inland Steel–East Chicago, Jones & Laughlin–Indiana Harbor, United States Steel–Gary, Bethlehem Steel–Burns Harbor, and National Steel's Midwest Division–Portage.

There has been a significant decline in the number of steelworkers employed over the last ten years. It is estimated that 15,000 jobs have been lost in this area in that time period, most of them in the steel industry. With current unemployment levels at 14.8 percent our area exceeds both the state average of 13.6 percent and the national average of 9.4 percent. Despite the alarming statistics, I do not believe the trend is indicative of the future health of the steel industry in Indiana. I would like to discuss some of the steel industry's assets and liabilities in this region, and what help can be expected from President Reagan's reindustrialization program.

All steel companies in the United States are in general agreement that there are three areas in which the federal Administration must provide assistance if the industry is to regain a dominant position in both the domestic and the international market. Those areas are capital formation, imports, and regulations.

CAPITAL FORMATION

According to the American Iron and Steel Institute, the average age of steelmaking facilities in Japan is 11 years versus 17.5 years in the United States, with at least one-fifth of our capacity over 25 years old. The Bethlehem–Burns Harbor and the National Steel–Midwest mills are among the newest greenfield site mills in the United States, although Midwest began operations in 1961 and Burns Harbor in 1965. Hundreds of millions of dollars have been spent or committed by the mills in Indiana, but too little has been available for productivity improvements. On the other hand, Japan has had massive infusions of money dedicated to the modernization of their mills.

Blast furnace rebuilds, new coke ovens, continuous casters, cold roll continuous annealing lines and revisions to galvanize lines costing hundreds of millions of dollars are some of the capital projects under construction or planned for the Calumet region. Unfortunately, these improvements are only a start because virtually all the mills have operating units which modern technology has left inefficient and outdated. If we are to compete effectively in the international marketplace, we must accelerate the rate at which this equipment is replaced. In 1980 the American steel industry had a net income as a percent of sales of 3 percent and a net income as a percent of investment of 8 percent. These returns are totally inadequate to sustain a competitive industry in the world market. The major stumbling block to the revitalization of our industry–raising capital through increased profitability–can be overcome through more rapid depreciation schedules and tax incentives designed to spur investment.

Under existing tax laws the U.S. depreciation policy requires 12 or more years to write off the original cost of a new plant and equipment. Compare this to Canada, our neighbor and competitor, which requires a 2½ year write-off. New capital recovery policies need to be written into our tax laws which abandon the asset depreciation range (ADR) system and provide instead a shorter depreciation period. The Accelerated Capital Recovery System (ACRS) proposed by the President and adopted by Congress promises significant long range advantages to industry.

IMPORTS

Part of the decline of the American steel industry can be attributed to steel imports. The market share of imported steel in the United States in 1950 was 2.5 percent of consumption. In the 1960s the import market share climbed to 10.2 percent and in the 1970s, 15.5 percent. In 1980 we imported 15.5 million tons while consuming a ten year low of 101.3 million tons of raw steel. Imports in 1981 should reach at least 19.5 million tons. Approximately 22 percent of this imported steel comes into the Great Lakes area and has a direct effect on the Calumet area mills. Much of this steel has been sold in this country at less than the cost to produce it and as such, falls into the area of American anti-subsidy and anti-dumping laws. Unfortunately, the enforcement of these laws has been lax and too often domestic steel producers have been victimized by governmental representatives making trade and economic concessions for political and military expediency. The Carter Administration enacted the Trigger Pricing Mechanism (TPM) in an effort to halt the dumping of steel products in this country. In retrospect, however, TPM has proved to be inadequate due to loopholes and spotty enforcement.

I believe in free trade and am opposed to any kind of punitive or restrictive tariffs. Neither do I want to see subsidies or other forms of direct assistance from the government to industry as so many of our foreign competition have implemented. The help our industry needs is for the strict enforcement of the law and the opportunity to compete with foreign steelmakers using the same basic ground rules.

The Trigger Pricing Mechanism has been strengthened and reinstituted by the current Administration, along with the promise of stricter enforcement.

REGULATIONS

As more and more people became aware of hazardous pollutants in the air and water, pressure was exerted on Congress to pass the Clean Air Act of 1970 and the Federal Water Pollution Control Act of 1972. Automobiles, airplanes, industrial plants, inadequate sewage treatment plants, agricultural run-off, street and parking lot run-off, and many other areas contributed to the degradation of the environment. Steel mills with their open hearths, coke ovens and coal piles were highly visible targets. Following passage of the laws, a bureaucracy developed very quickly in the Environmental Protection Agency which I believe interpreted the law far beyond the original intent of Congress. Many of these interpretations led to severe economic restrictions on industry, resulting in some plant shutdowns and layoffs.

The American Iron and Steel Institute commissioned Authur D. Little, Inc. to obtain objective industry-wide data and analyses on the performance of the U.S. steel industry in meeting regulations imposed through the Clean Air Act of 1970 and the Federal Water Pollution Control Act of 1972, and the 1979 amendments to both these laws. In addition, the study assessed the overall economic consequences of meeting these regulations in the future.

The steel industry in the United States has spent $8.5 billion on the various environmental compliance programs and will spend another $7.7 billion by 1990 unless some relaxation of current requirements is permitted.

I recognize and endorse the need to continue strides made in our industry toward the two basic objectives contained in the Clear Air and Clean Water Acts. The primary air quality standards call for control of certain criteria pollutants and any additional hazardous pollutants which may have an adverse effect on public health. The Clean Water Act's first objective is directed towards certain specific pollutants.

The area steel mills have shown remarkable improvement in pollution levels in the last ten years; in fact, some mills now are, or soon will be, in total compliance with the primary air and water standards. We are urging the Administration to restudy the need for the secondary objectives. In the Clean Air Act the secondary objective concerns the attainment of air quality standards to protect the public welfare. These standards are not necessary to protect the public health. The Clean Water Act calls for a secondary objective to eliminate all effluents—in other words "zero discharge." Since it is estimated the steel industry is now approximately 95 percent in compliance, with Indiana mills probably higher, it is appropriate to ask that more decisions be made on the basis of the cost versus the benefits to be attained.

The Administration has declared its intention to relax regulatory overkill. The work underway to take a common sense approach to OSHA and EPA is encouraging. Energy costs in our area are significantly higher than other sections of Indiana and most of the nation. Northern Indiana Public Service Company, which serves this district with electric power, is 95 percent coal fired generation, of which 50 percent is transported by diesel powered unit train from coal fields in Wyoming. Indiana has coal reserves of 17 billion tons, most of which is not available to the mills or utilities due to environmental restrictions. A relaxation of the sulphur dioxide standards or new technology for its removal is needed to permit the use of Indiana coal. Current practice calls for the use of scrubbers to lower the SO_2 content of coal, but the scrubbers are heavy energy consumers and the process leaves a sludge residue. The residue is then deposited in landfills which are becoming increasingly difficult to locate.

Relief in this area would not only reduce the cost of energy to the general public, but also to the coal and electricity consuming mills and add to the attraction of the area for other industries seeking building sites.

SUMMARY

Although it is far too early to assess the benefits of President Reagan's reindustrialization program on the steel mills of Northwest Indiana, it is apparent that the administration and Congress realize the necessity for action to help make the industry more competitive.

With the industry section of the tax bill passed last year, stronger enforcement of anti-dumping laws and a practical examination of environmental regulations from a cost/benefit standpoint are all tangible evidence that the President's promises were not just campaign oratory. He realizes the need for industry to earn a reasonable profit in order to generate the funds needed for research and development of new processes and plant modernization and expansion.

The mills of the five major steel corporations in Lake and Porter counties are the most modern steel producing units in the United States. These mills are in close proximity to the major steel consuming market in this country and are served by adequate rail, truck and water transportation. The mills are strategically located to receive the raw materials which go into the making of iron and steel and there is an adequate supply of labor available to man the various steel processing units. Within easy driving distance are many attractive home sites which, coupled with the recreational potential of Lake Michigan, enhance the quality of life in this area. The many cultural pursuits of northern Indiana and Chicago and the educational opportunities of the many colleges and universities all combine to make Lake and Porter counties attractive areas within which to work and live.

The benefits which are expected from the various government activities unquestionably will be very helpful but they alone will not make the American steel industry the low cost producer in the world. The industry recognizes the need for greater productivity, better quality and more worker involvement. Teams are being set up in various area mills which dedicate themselves to the attainment of these objectives.

We need to reexamine the way in which we manage our businesses; our organization and structures; the climate we create within the mills. Changes must be made where traditional views are no longer appropriate.

Despite the staggering costs associated with updating our industry, I believe the

Continued on page 9, col. 3

Indiana's
Business

THE TRAUMA IN MANUFACTURING

The evidence is now clear that Indiana was hit harder and hit earlier by the recession of 1979-82 than was the nation as a whole. This past January, manufacturing manhours in Indiana reached the lowest level since July 1961. The nation has receded only to the July 1975 level. February data show improvement from January's lows, but these data are not seasonally adjusted (see man-hours table on p. 6). January's cold weather would lower its figures and make the February rebound appear stronger than reality would warrant.

Following the recession of 1975 both Indiana and the United States reached a peak in manufacturing manhours in December 1978. Since then both have had a dominant downward trend. This past January the number of manhours in Indiana was 26 percent below its December 1978 peak whereas the number of manhours in the nation was down by only 16.9 percent.

Figure 1 shows the data for both Indiana and the United States as a percent of December 1978. The brief recovery of 1980 and the stagnation of early 1981 are clearly evident.

Data for individual industries indicate that the slide for Indiana began in many instances before the national decline. Primary metals and electrical machinery in Indiana began declining a full two years before their national counterparts (see Table 1). These two Indiana industries were among seven in which Indiana's slide preceded the nation. Five Indiana industries began their declines at the same time as the nation and only three lagged the nation.

Not only did declines begin earlier in many of Indiana's manufacturing industries, but in 13 of the 15 these declines were also more severe. Hardest hit in Indiana has been the transportation equipment industry and the lumber and wood industry. Both have shrunk by more than 40 percent since their peak.

Not all Indiana industries fit this pattern of earlier and steeper declines. In particlular, the chemical industry in Indiana did not peak until August 1981, twenty-six months after the national chemical industry peaked. The decline in manhours in the state's chemical industry has not been as severe as in the nation either, down only 4 percent compared to 5.5 percent for the nation.

The fabricated metals industry in both the nation and the state began declining in December 1978. This Indiana industry bottomed out in July 1980 while nationally the decline continued through January

Table 1

		Post 1975 Peak	*Trough*	*Percentage Change Peak to Trough*
Total Manufacturing	Indiana	12/78	1/82	−26.0
	United States	*12/78*	*1/82*	*−16.9*
Food	Indiana	9/76	2/81	−22.4
	United States	*9/79*	*1/82*	*−16.5*
Rubber	Indiana	1/79	1/82	−34.9
	United States	*12/78*	*7/80*	*−19.9*
Stone, Clay, Glass	Indiana	6/78	1/82	−35.5
	United States	*6/79*	*1/82*	*−28.4*
Primary Metals	Indiana	4/79	12/81	−27.1
	United States	*6/79*	*1/82*	*−25.2*
Fabricated Metals	Indiana	12/78	7/80	−33.2
	United States	*12/78*	*1/82*	*−21.8*
Non-Electrical Machinery	Indiana	12/78	1/82	−24.4
	United States	*12/78*	*1/82*	*− 9.2*
Electrical Machinery	Indiana	9/77	1/82	−27.1
	United States	*12/79*	*7/80*	*−11.8*
Transportation Equipment	Indiana	12/78	1/82	−43.2
	United States	*12/78*	*1/82*	*−29.6*
Chemicals	Indiana	8/81	1/82	− 4.9
	United States	*6/79*	*1/82*	*− 5.5*
Furniture	Indiana	6/78	2/82	−30.8
	United States	*12/78*	*1/82*	*−25.6*
Textiles	Indiana	10/77	1/82	−31.5
	United States	*6/78*	*1/82*	*−25.6*
Lumber and Wood	Indiana	6/79	1/82	−42.1
	United States	*6/79*	*1/82*	*−36.5*
Paper	Indiana	6/78	2/82	−20.9
	United States	*6/78*	*1/82*	*−10.0*
Printing	Indiana	7/79	2/82	−19.2
	United States	*12/81*	*1/82*	*− 5.2*
Petroleum Refining	Indiana	10/80	2/82	−26.4
	United States	*9/79*	*3/80*	*−37.1*

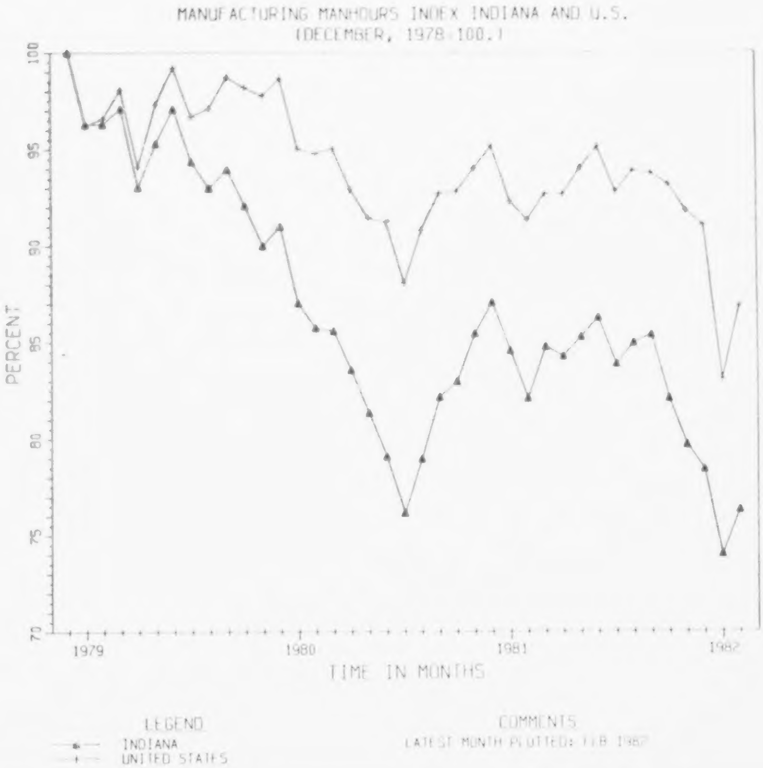
of this year. Even though the decline in Indiana was six months shorter than the nation's, it was considerably more severe, dropping 33.2 percent compared to only 21.8 percent.

It should be noted that in the four industries shown in Table 1, February 1982 is shown as the trough. It is possible that when later data become available we shall find that February is only an intermediate position on the way towards a later low.

The question before business analysts at this time is whether the Indiana recovery will be as dramatic as its decline and whether that recovery will be coincident with the national turnaround. In the preceding recessions (1974-75) Indiana lagged the nation during the early recovery stage. The progress of this recovery is likely to depend on consumer durable sales in the coming months.

Frank K. Kushman

FIGURE 1



MAN-HOURS IN INDUSTRIAL PRODUCTION

(Seasonally adjusted data)

	United States				*Indiana*			
	Latest Month **(millions)**		*Percent Change From* *One Month Ago*	*One Year Ago*	*Latest Month* **(thousands)**		*Percent Change From* *One Month Ago*	*One Year Ago*
Manufacturing	**Feb.**	**766.3**	**4.4**	**– 5.2**	**Feb.**	**25,850.0**	**3.6**	**– 7.0**
Food	Feb.	63.7	0.2	– 2.9	Feb.	1,451.9	0.2	3.1
Apparel and textiles	Feb.	76.3	17.6	– 8.0	Feb.	368.6	0.3	– 5.9
Lumber and wood	Feb.	24.3	12.1	– 7.3	Feb.	590.9	6.4	–13.3
Furniture	Feb.	17.2	10.5	– 5.5	Feb.	661.2	–4.0	–11.6
Paper	Feb.	29.5	– 1.0	– 3.1	Feb.	525.4	–1.7	–11.7
Printing	Feb.	50.7	0.5	7.1	Feb.	1,065.1	–2.8	– 6.0
Chemicals	Feb.	45.1	– 1.0	– 2.0	Feb.	1,364.4	4.9	1.8
Petroleum and products	Feb.	8.4	– 3.5	– 4.9	Feb.	174.9	–2.8	–14.9
Rubber and plastics	Feb.	28.2	2.4	– 5.0	Feb.	1,157.7	9.5	– 6.5
Stone, clay and glass	Feb.	22.9	2.2	– 8.7	Feb.	799.0	2.6	– 7.7
Primary metals	Feb.	40.7	0.9	–13.2	Feb.	3,990.0	5.1	–15.0
Fabricated metals	Feb.	59.2	3.0	–12.2	Feb.	2,214.0	1.4	– 5.9
Nonelectrical machinery	Feb.	106.4	4.7	– 2.7	Feb.	2,869.0	–0.9	– 4.7
Electrical machinery	Feb.	82.5	3.1	– 1.6	Feb.	3,789.8	–1.7	– 8.0
Transport equipment	Feb.	68.5	3.2	–12.7	Feb.	2,918.3	2.3	– 7.6

THE VALUE OF A DOLLAR IN WAGES

For both the U.S. and Indiana, the period from 1968 to 1978 saw an increase in the value added by manufacture per dollar paid in wages to production workers. The value added by manufacture is defined as the dollar difference between the products shipped from that area and the cost of the materials shipped to that area (adjusted for change in inventory). When this value is divided by the dollars spent in wages to production workers, it yields a ratio which defines the increase in value generated per dollar spent on wages of production workers. In 1968, the national value to wage ratio was 3.25. That is, there was an increase in value by manufacture of $3.25 for every dollar spent in wages to production workers. In 1978, the increase in value was $3.75 for every dollar paid in wages. This constituted a 15 percent increase in the value added per wage dollar. In Indiana, by contrast, this increase was only 6 percent. In 1968, Indiana generated a $3.04 increase for every dollar in wages, while in 1978 this increase was $3.22.

There are dramatic differences between the performance shown by the 24 largest industrial counties of Indiana. In 1968, six of these counties (Bartholomew, Clark, Monroe, Porter, Tippecanoe and Vigo) added more value per wage dollar than the national average. Furthermore, five of these counties (all except Clark) improved this value at a faster rate than the nation for the period from 1968 to 1978. That is, they not only showed superior performance in 1968, but extended this advantage further in the succeeding decade.

By 1978, Monroe County (the highest) added value of $5.54 per dollar in wages paid to production workers, 48 percent better than the national average. Two other counties, Porter and Tippecanoe, increased their value added per wage dollar at more than twice the national rate.

In contrast, five other counties not only added less value per wage dollar than the U.S. in 1968 but had an even lower ratio in 1978 (Delaware, Fayette, Grant, Howard and Lake).

What are the possible causes of such differences? It could be due to differential increases in wages or to differential increases in the value added by manufacture. The effective hourly wages paid to produc-

VALUE ADDED BY MANUFACTURE PER DOLLAR WAGE
OF PRODUCTION WORKER:
LARGE INDUSTRIAL COUNTIES

Area	*1968*	*Rank*	*1978*	*Rank*	*% Change*	*Rank*
United States	3.25		3.75		+15	
Indiana	3.04		3.22		+ 6	
Allen	2.92	12	4.06	6	+39	3
Bartholomew	3.61	4	4.29	3	+19	8
Clark	5.48	1	4.27	4	−22	24
Delaware	2.66	17	2.64	19	− 1	17
Dubois	2.42	24	2.62	20	+ 8	11
Elkhart	3.50	5	3.64	11	+ 4	16
Fayette	2.58	20	2.53	22	− 2	19
Grant	3.07	10	2.70	18	−12	21
Henry	2.50	22	2.05	24	−18	23
Howard	2.65	18	2.59	21	− 2	19
Kosciusko	3.43	6	3.70	9	+ 8	11
Lake	2.81	13	2.44	23	−13	22
La Porte	2.80	14	3.58	12	+28	5
Madison	2.63	19	2.78	17	+ 5	15
Marion	3.07	10	3.32	13	+ 8	11
Monroe	4.35	2	5.54	1	+27	6
Noble	2.50	22	3.69	10	+48	2
Porter	3.18	8	4.23	5	+33	4
St. Joseph	2.75	15	3.18	14	+16	10
Tippecanoe	3.18	8	4.87	2	+53	1
Vanderburgh	3.79	3	3.77	8	− 1	17
Vigo	3.22	7	3.92	7	+22	7
Wabash	2.54	21	2.95	15	+17	9
Wayne	2.73	16	2.94	16	+ 7	14
Rest of Indiana	3.04		3.37		+11	

Source: 1968 and 1978 Annual Survey of Manufacturers tion workers in the five poorly performing counties increased by 139 percent between 1968 and 1978. However, the effective hourly wages in the five counties with strong performance rose by 141 percent during the same period. Therefore the difference in performance does not appear to be due to wages but must be entirely due to differences in the value added. During the decade 1968-1978 the value added by manufacture increased by 97 percent in the poorly performing counties but increased by 241 percent in the strongly performing counties.

Although data are not available at the county level, in many cases, indications regarding causes can be drawn by looking at new capital expenditures for the state and comparing it to the nation. In 1968, for the U.S., 7.23 percent of the value added by manufacture was reinvested in new capital expenditure. In the same year, new capital expenditure in Indiana was 8.40 percent of the value added by manufacture. This presumably reflects the different mix of industries, with Indiana having a concentration in the capital-intensive durable goods manufacturing sector. In 1978, the U.S. invested 8.87 percent of its value added into new capital expenditures whereas Indiana only invested 8.43 percent. This loss of advantage in new capital expenditure may be part of the cause in the lowered value added per wage dollar spent.

Joel C. Webster

INDIANA INDUSTRIAL ELECTRICITY SALES
(Seasonally adjusted in millions of kilowatt hours)

	Feb. 1982	*Jan. 1982*	*Feb. 1981*	*Percent Change From*	
				One Month Ago	*One Year Ago*
Anderson	27.6	21.4	21.5	28.5	27.9
Bedford	10.7	11.5	16.8	- 6.0	36.3
Bloomington	3.6	3.9	3.1	- 7.7	16.1
Columbus	17.7	16.7	19.4	6.0	- 8.8
Connersville	8.3	6.1	9.6	36.1	-13.5
Crawfordsville	12.0	10.7	10.8	12.1	11.1
East Chicago	23.2	22.9	31.2	1.3	-25.6
Elkhart	22.9	20.7	19.8	10.6	15.7
Evansville	45.5	38.7	45.9	17.6	- 0.9
Fort Wayne	45.2	40.2	43.5	12.2	3.7
Frankfort	8.8	7.9	8.3	14.3	6.0
Gary	188.1	192.8	201.9	- 2.4	- 6.8
Goshen	8.8	7.7	9.8	14.3	-10.2
Hammond	52.9	50.7	58.1	4.3	- 9.0
Huntington	4.7	4.6	5.5	2.2	-14.5
Indianapolis	316.8	319.2	352.1	- 0.8	-10.0
Jeffersonville	5.7	5.5	6.5	3.6	-9.5
Kokomo	59.7	62.4	72.1	- 4.3	-17.2
Lafayette	36.4	36.1	40.7	.8	-10.6
La Porte	15.0	13.5	15.1	11.1	- 0.7
Logansport	8.0	9.9	8.9	-19.2	-10.1
Madison	2.4	2.5	2.6	- 4.0	- 7.7
Marion	28.6	25.6	27.1	11.7	5.5
Michigan City	43.1	42.9	41.4	.47	4.1
Mishawaka	4.1	3.5	2.1	17.1	95.2
Muncie	14.0	12.6	18.6	11.1	-24.7
New Albany	4.6	5.0	5.1	- 8.0	- 9.8
New Castle	7.2	7.2	9.2	0.0	-21.7
Peru	5.3	5.0	6.2	6.0	-14.5
Richmond	22.6	23.3	23.4	- 3.0	- 3.4
Seymour	2.6	2.4	2.6	8.3	0.0
South Bend	28.4	22.0	25.4	29.1	11.8
Terre Haute	26.3	27.1	31.8	- 3.0	-17.3
Valparaiso	8.2	8.0	8.3	2.5	- 1.2
Vincennes	3.0	2.8	3.9	7.1	-23.1
Wabash	6.5	5.6	7.7	16.1	-15.6
Indiana	1754.4	1734.8	1942.9	1.1	- 9.7

Davis, continued

tion of Economic Cooperation and Development, incentives to steel workers, and the tripartite relations between labor-management-government to find tax incentives to induce capital formation, are the best policies that can be utilized to accomplish this end.

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[1] Donald Lawrence Davis, Lillian Miles, and Becky Miles, "Historical Analysis of the Employment in the Gary-Hammond-East Chicago SMSA by Industrial Sector, 1970 to 1980," *Indiana Business Review*, Volume 56, April 1981, pp. 10-20.

[2] Luc Kiers, *"A Westview Special Study: The American Steel Industry, Problems, Challenges, Perspectives,"* Westview Press, 1980.

[3] Robert W. Crandall, *The U.S. Steel Industry in Recurrent Crisis*, The Brookings Institution, 1981.

Doty, continued

steel mills in the Lake-Porter county area are several steps ahead of mills in other areas of the United States. Our natural assets here, coupled with a more favorable financial climate and the determination of all segments of the steelworker population to match or surpass the foreign steel industry in productivity are sufficient reasons to be optimistic, to believe our area has a great future.

UNITED STATES-INDIANA BUSINESS INDICATORS*

(Seasonally adjusted indexes unless otherwise noted; base period: 1967 – 100)

	United States				*Indiana*			
	Latest Month		*Previous Month*	*One Year Ago*	*Latest Month*		*Previous Month*	*One Year Ago*
EMPLOYMENT								
Nonagricultural employment	Feb.	138.2	138.1	138.7	Feb.	116.5	116.5	121.6
Manufacturing employment	Feb.	100.2	100.4	103.8	Feb.	86.4	86.8	92.9
Average weekly hours (No.)†	Feb.	38.9	37.1	39.5	Feb.	39.4	38.0	39.4
Average weekly earnings ($)†	Feb.	324.8	312.0	306.1	Feb.	384.2	369.7	361.7
Nonmanufacturing employment	Feb.	154.5	154.3	153.6	Feb.	137.0	136.8	140.0
Unemployment rate (%)	Feb.	8.8	8.5	7.4	Feb.	12.1	12.6	8.8
Unemployment-married males (%)	Feb.	5.3	5.3	4.1	–	–	–	–
Continued unemployment claims	–	–	–	–	Feb.	357.2	371.9	306.9
PRODUCTION								
Bituminous coal production	Jan.	169.7	152.0	170.1	–	–	–	–
Industrial electricity production	Nov.	143.9	145.0	147.8	–	–	–	–
Industrial electricity sales	–	–	–	–	Feb.	155.9	154.9	163.0
Manufacturing production	Feb.	140.1	137.6	151.2	Feb.	140.2	139.2	145.8
Raw steel production	Feb.	73.8	75.4	103.2	Feb.	115.5	99.8	140.0
CONSTRUCTION								
Construction activity-total	Jan.	298.2	302.6	334.4	Feb.	167.1	169.3	226.8
Residential housing starts	Feb.	74.2	69.7	100.7	Feb.	93.1	50.4	195.5
Residential expenditures	Jan.	306.9	313.6	396.6	Feb.	180.6	192.2	301.1
Nonresidential expenditures	Jan.	294.0	297.2	304.1	Feb.	188.6	194.0	241.1
Public expenditures	Jan.	198.4	207.0	254.0	–	–	–	–
Public works and utilities	–	–	–	–	Feb.	104.4	106.3	119.2
OTHER INDICATORS								
Personal Income Per Capita ($)[1]	Dec.	10,787.5	10,797.3	9,949.7	81:3	9,756.0	9,603.0	8,990.0
Passenger Car Sales (000's)	Feb.	633.0	535.0	764.0	Jan.	8.5	9.3	13.1
Year to Date (000's)	Feb.	1,168.0	535.0	1,412.0	Jan.	8.5	180.6	13.1

*Current indicators are preliminary and subject to revision

†Not seasonally adjusted

[1] SOURCES: Data on Indiana construction from McGraw-Hill Information Systems Company; Indiana passenger car registration from R.L. Polk & Co.; indexes of raw steel production for the United States and Indiana courtesy of American Iron and Steel Institute, Washington, D.C.; all other data from U.S. and Indiana government agencies and Division of Research, School of Business, Indiana University.

Steel and the Regional Economy

L.P. SINGER

Professor of Economics, Indiana University-Northwest

As Professor Rosegger indicated last month in the *Indiana Business Review*, it is uncertain whether the down trend in domestic steel production would not have occurred even in the absence of imports. Our econometric models appear to support this conclusion. Steel imports have not entered significantly in any of our equations. On the other hand—possibly because of the close linkage of regional steel production with autos, particularly General Motors—automobile imports along with machine tool imports heavily impinge on regional steel output and employment.

Clearly, as foreign competitors developed equal—or in some instances more advanced—capital structures, the advantage which the U.S. held for more than half a century gradually vanished. With the production of capital about even, a competitive advantage, if any, has to be drawn from labor or management, and neither specially favors the U.S. or the Northwest Indiana Region.

The oil crunch had an irreversible impact on local steel. While imports of autos remained a small proportion of the local market through the 1960s, the absence of organized dealerships and parts restrained the inroads of imports. The oil crunch caused a dramatic change in taste (or at least an accommodation) among midwesterners. Large scale substitution of imports for domestic autos facilitated the vast expansion of dealerships, foreign car service firms, and parts supply outlets which drastically reduced the risks associated with foreign car ownership.

The steel forecasting equations used indicate a close correlation between local steel with national indicators as shown in Table 1. All indicator series are converted to indexes with a January 1974 base so as to avoid any scale effect. In addition, to avoid seasonal disturbances, all series measure the net gain or loss realized in the current month over the corresponding month a year earlier. Table 2 gives the aggregate driving variables.

Our objective is to forecast steel employment measured in man hours. To do this we combine the two monetary measures (X1 and X2) into a weighted predictor with a *long*—9 months—lead. Inventory changes (X3) and the proportion of vendors showing slow deliveries (X4) become an *intermediate* predictor with a four month lead. Similarly, the GNP inventory change (X5) and the installment debt change (X6) are weighted and transformed into a short predictor with a three month lead. In addition the driving aggregates X7 through X10 from Table 2 are combined into a single weighted driving predictor. We now add an index of business sentiment which is obtained from semi-annual surveys of over 400 businesses. The business sentiment index for steel is heavily weighted by order books of manufacturing firms. A logarithmic trend factor is added for the final Predictor Equation—

PREDICTOR EQUATION

Steel Employment Equals—

	0.3675	Long Indicator	(X1, X2)
+	0.5442	Intermediate Indicator	(X3, X4)
+	0.2029	Short Indicator	(X5, X6)
+	0.3652	Aggregate Driving Index	(X7-X10)
+	0.0023	Business Predictor Index	
-	0.00089	Logarithmic Trend	
+		Steel Employment lagged 12 months	

Figure 1 below tracks the predictions made by the equation with a 9 month lead and compares the results with the actual data. We note that we were able to predict with a great degree of precision the downturn of 1979, the rebound of 1980, and we may be accurately predicting the progress of the current recession. The models failed embarrassingly in the long halting recovery past 1977. In fact, our predictions were contrary to the events of 1977 to 1978. The general trend was about on target but it was completely off phase. We still wonder what went wrong. The most *plausible explanation is that the radical and* unpredictable changes in monetary policy and the changes in the automobile and import markets may have wreaked havoc with our model. In addition labor was

Table 1

Dependent Variable; Steel employment (man hours) differenced 12 months

Predicitor Variable: Indicators Differenced 12 months	*Partial Regression Coefficient = Weights*	*T-Statistics*	*Lead Time (Months)*
X1) M 1 B in 1972 dollars	0.4193	9	2.965
X2) M 2 in 1972 dollars	0.0813	8	4.119
X3) Change in inventories	0.00510	6	2.854
X4) Proportion of Vendors reporting slow deliveries	0.05758	5	5.394
X5) GNP inventory change	0.0281	3	6.864
X6) Change in installment debt	0.0290	2	3.736

hoarded and scheduled to maintenance and repairs. The regional steel market was clearly out of phase with national indicators.

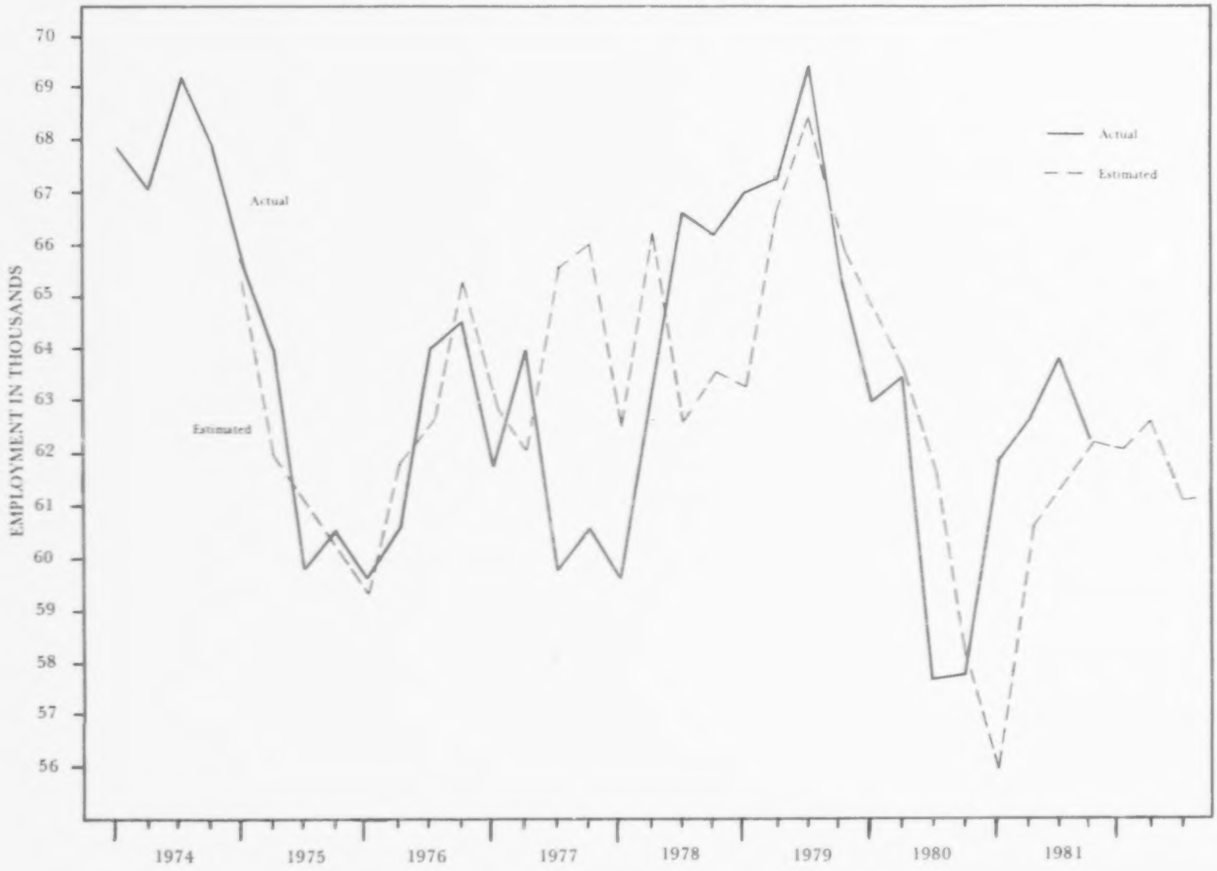
Our final step is to analyze by Generalized Least Squares the impact of steel on the local economy. Table 3 summarizes the results.

The GLS model clearly reveals the impact that steel has on the Region: for each gain or loss of 100 steel jobs, other things equal, an average of about 250 jobs are lost or gained in total regional employment. This conclusion is true even though steel shows a declining long term growth trend while total regional employment exhibits a slightly rising trend. Steel now

Table 2

Predictor Series	*Partial Regression Coefficient*	*Lead Time (Months)*	*T-Statistics*
X7) Real Fixed Investment Net of Imports	0.16283	2	9.7
X8) Real Auto Consumption Net of Imports	0.2319	3	4.41
X9) Real GNP	0.6805	3	3.48
X10) Housing Starts	0.1664	2	3.72

FIGURE 1
LOCAL STEEL EMPLOYMENT



accounts for about 23 percent of total employment and about 32 percent of total wage income.

The perception that steel dominates the Northwest Indiana Region is still very strong indeed. Historically, we have found that a strong link exists between expectations formulated by local businesses concerning future economic trends and the outlook for steel.

One of the problems of local steel is the seemingly perverse behavior of marginal wage costs in relation to productivity. Steel's marginal wages tend to decline as full utilization of capacity is approached. For example, as steel output in net tons increased about 29 percent from the February to April average in 1981 to the high of May 1981, the total wage bill rose only a hair above 5 percent. On the other hand, when output declined almost 38 percent from the May 1981 high to the year end low, the real wage bill fell less than 3 percent. Thus per net ton wage cost at the low levels of capacity utilization actually rose almost 27 percent. Consequently, recessions tend to affect steel's profitability relatively more than some other industries. Until this and other steel related issues are resolved, steel will continue as a dominant moving force for the Region.

Table 3
Partial Model

Variable	*GLS Coefficient**	*T-Statistics*	*Dependent Variable*
Long Indicator	0.479	2.53	Steel Employment Differenced 12 Months
Intermediate Indicator	0.059	3.29	
Short Indicator	0.0093	0.812	
Auto-Imports	0.1065	1.94	
Autos Squared	–0.0084	0.56	
Long Interest Rates	–0.754	1.68	
Real Investment	0.221	6.68	
Logarithmic Trend	–0.0093	4.99	
Steel Employment	2.47	1.98	Total Regional Employment Differenced 12 Months
Long Indicator	1.66	2.95	
Intermediate Indicator	0.303	4.94	
Short Indicator	0.168	0.49	
Prime Rate	–0.691	1.93	
Real GNP	0.00142	3.47	
Local Business Forecast Index	0.00072	0.949	
Logarithmic Trend	0.00103	1.181	

*GLS=Generalized Least Squares

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Eugene A. Brady and Morton J. Marcus **National Outlook Update / 2**

Gary Albrecht and Richard L. Pfister **Indiana's Revised Outlook / 6**

Frank K. Kushman **Relative Unemployment / 9**

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National Outlook Update

In this issue ■ ■ ■

The Business Outlook at mid-year is a tradition of this *Review*. This year the conditions of uncertainty seem to be stronger than ever. Eugene Brady prepared a review article as a basis for our forecast. In the best tradition of economists, there was no consensus and the resulting product is a compromise.

From that starting point, Gary Albrecht and Richard Pfister have fashioned a revised forecast for the Indiana economy using the Econometric Model of Indiana. Their work is complemented by Frank Kushman's county-by-county examination of unemployment rates in Indiana during this recession.

This issue of the *IBR* does return to a former tradition. The reports from our metropolitan writers on the outlook in the diverse areas of the state will appear in a separate issue of the *Review* to be published in June.

Morton J. Marcus,
Editor

INDIANA BUSINESS REVIEW

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INTRODUCTION

Is it over yet? That is the question being asked throughout the nation during this second quarter of 1982 concerning the recession. Most economists are prepared to declare that an end to the recession is at hand, but they are reluctant to identify the specific date on which the decline has or will come to an end. Statistical evidence on the turnaround will not be forthcoming for several months. At this point (early May 1982) we can see the signs of a bottoming out in economic performance and suggestions of a moderate recovery in the remainder of 1982.

There is general agreement that the economy will improve with the tax cuts due July 1, so that the turnaround should take place during the third quarter of 1982. The White House and Congress are trading budget cuts and cutting remarks as they prepare for the election in November. Current budget deficit estimates assume substantial expenditure cuts by Congress. We expect that the Administration will have to give in some on the defense budget, and that Congress will reciprocate with further cuts in the non-defense budget. However, only minor cuts will occur in transfer payment income before the November elections; major revisions in these areas will be postponed until 1983.

INTEREST RATES AND CREDIT

High real interest rates remain the major cause of the continuing softness in the economy. Several major reasons continue to keep real rates of interest unusually high:

1. The financial markets do not believe the federal budget is under control.
2. Increased reservations about the whole area of "supply side" economics.
3. Belief that the Federal Reserve might monetize the deficits and increase inflationary expectations before the November elections.
4. Greater volatility of interest rates increases the risk of holding bonds and requires a higher return on them.
5. Higher marginal tax rates increase the after-tax real return required on bonds.
6. The growth of the more broadly defined money supply (now M2) is accelerated by higher interest rates, with a positive feedback effect.

To these explanations for the continued high nominal interest rates let us add three additional thoughts:

1. The Financial Reform Act of 1980 has fundamentally changed the structure and the mode of operation of the financial markets in the U.S. We used to categorize deposits into checking accounts, which were intended to be spent, and savings-type accounts, which were intended to be saved. No such separation can be made at the present time, and it is unclear whether money-market funds, for example, represent savings or uncompleted spending transactions. Possibly, even the depositors themselves don't know.

2. Since almost *all* deposits now pay interest rates, the extremely high interest rates simply reflect the possibility that the Fed policies have been far *too* tight and perhaps tighter than the Federal Reserve intended with the old financial structure in mind. What the Federal Reserve System has accomplished in the past six or nine months is the almost complete, but perhaps temporary, elimination of a rate of inflation that had built up over the last fifteen years. Many business leaders and economists now feel that the Fed overreacted, and that it should have been more

gradual in its methods of licking inflation.

3. Finally, the supply-side explanation for high real rates rests on the classic devaluation of the dollar that is taking place. In the same way that rising inflation benefits debtors, declining inflation rates hurt debtors. Who are these debtors? They are mortgage holders, small businesses and large corporations, among others, who have gone into both short-term and long-term debt. They are currently finding that, with disinflation (as opposed to deflation) the value of their assets (houses, finished products, etc.) isn't going up at a rate that is comparable to the rates they must pay on their liabilities. They are forced to commit a bigger portion of their incomes to pay down their past debts. As a result, many are left scrambling for funds to avoid default or bankruptcy, and interest rates move up accordingly. "Crowding out" to a supply sider isn't the U.S. Treasury crowding out the private sector, but rather the private sector, in its search for additional capital, crowding out the Government, which is only a price-taker in the money and capital markets.

It is ironic that this Catch-22 situation exists at the present time in the money and capital markets. High interest rates cause recession and increase the debt burdens of households and firms alike. Recession, deregulation, high real interest rates and increased foreign competition have put many firms and households on the edge of insolvency. Business failures in 1981 were 50 percent higher than in 1980, and in the early part of 1982, the bankruptcy rate in the U.S. was up 55 percent above the same interval in 1981. The end is not in sight. Unfortunately, a deteriorating financial climate is triggering a demand for funds that is keeping real rates of interest at or near double-digit levels.

The same sort of thing happened during the 1973-75 recession, but the acute financial stress was for the most part limited to real estate related businesses. At the present time the financial crisis is being felt across the broad spectrum of American business, including construction, retailing, airlines, trucking, agriculture, and farm implements. Currently, most medium and small sized businesses are under-capitalized, and must go to financial intermediaries for their credit needs. However, the charges are currently running to as much as five points above prime. Either the rate of inflation must rise or the money rate or interest rate must decline in the coming months. We expect the latter. But if real interest rates remain at or near present levels, the 1981-82 recession could turn into the 1981-8? depression.

INFLATION

The bright spot in the current economic outlook is the major dent that the recession is putting in the rate of inflation. Inflation has declined markedly in the last year at both producer and consumer levels. The implicit GNP deflator, which was increasing at a double-digit rate toward the end of 1980, declined steadily throughout 1981 from 9.8 percent in the first quarter to 8.4 percent in the fourth quarter. It is estimated to be in the neighborhood of 6 percent to 7 percent at the present time. Both the consumer price index, which is currently rising at a rate of only about 4 percent, and the producer price index, which has actually declined in recent months, indicate that inflationary pressures are at least temporarily abating. This is for the most part very good news indeed. Since the producer price index is a leading indicator of the consumer price index, we can expect the rate of inflation, as measured by consumer prices, to continue to fall or remain steady in the coming months.

Why is the rate of inflation coming down so rapidly? It appears to be a combination of tight money, soft demand, and good luck. Food and energy prices, which are usually considered separately from other prices which make up "core" inflation, have been for the most part flat or falling so far this year. These two "exogenous" sets of prices have reflected the bumper crops of last year together with the world-wide oil glut.

Is the sharply lower current rate of inflation here to stay, or is it simply a recession-induced phenomenon that will disappear when the recession ends? Will the recovery bring sharply higher rates of inflation? In the postwar period, inflation has been cyclical, with prices tending to rise fastest at or near the peak of the business cycle. In earlier recessions prices actually declined, but after 1965 inflation tended to trend upward even during periods of slack economic activity. However, recently there have been significant changes in the structure of much of American industry, with rapid deregulation taking place in the trucking, airline, and financial sectors. The current problems of housing and autos have softened raw materials prices across the board, and the commodity futures markets have all shown sharp declines over the last few months. The slowdown in raw materials prices increases will continue to dampen inflationary pressures over the next two years.

REAL OUTPUT

With contrasting views, the best we can see is a flat period for the second quarter of this year. During this period output will increase at about a 3 percent annual rate in the third quarter and a 4 percent annual rate in the last quarter of 1982. The upswing in economic activity should continue throughout 1983 at a moderate pace, without undue inflationary pressure (see Table 1).

EMPLOYMENT

The rate of unemployment has recently exceeded the previous 1974-75 recession. Current unemployment rates, the worst of the post-WWII era, will continue at or near current levels throughout the remainder of 1982. When viewed from a standpoint of labor utilization, the 1980 recession has continued into 1982, with two major upward rachets in the unemployment rate. In 1979, unemployment remained at or near 6 percent, rising to 7.5 percent from

Table 1

I.U. FORECAST

May 3, 1982

	1982:2	1982:3	1982:4
Percent change in real GNP (AR)	0.0	3.0	4.0
Percent change in consumer price index (AR)	2.6	5.0	6.0
Prime rate at commercial banks	15%	14%	13%
U.S. unemployment rate	9.4	9.6	9.4

AR = annual rate

the middle of 1980 through mid 1981, then escalating to almost 9 percent in 1982. The recession has already turned into a depression in industries like autos, agricultural equipment, construction, chemical equipment, machine tools, and electrical machinery. Unemployment rates, a lagging indicator, will remain high for the entire year.

Every time the unemployment rate goes up 1 percent, the federal deficit rises about $25 billion. However, the statistics on unemployment are biased downward because they exclude "discouraged" workers from the labor force. At the present time, about 1.3 million workers fall into this category, and if they were counted in the unemployment statistics, the rate of unemployment would have been 12.5 percent for the first quarter of 1982. In addition, there are about 5.5 million workers in the U.S. who have taken part-time jobs because they cannot find full-time work. In brief, the unemployment situation currently is being compared by some to the Great Depression of the 1930s. As usual, unemployment falls disproportionately on the young, the uneducated and the non-white. Blacks, who make up 10 percent of the population in this country, have an unemployment rate of 20 percent, and make up about 40 percent of the discouraged workers in America.

BUSINESS FIXED INVESTMENTS

Real spending on plant and equipment during 1982 will decline by about 1 percent, if the recent surveys made by the Department of Commerce hold up. The major factor, of course, is the unusually high real rate of interest, which is choking the implementation of all but the most optimistic investment projects. The latest Department of Commerce report shows that nonfarm businesses plan to spend a little less than $350 billion on new investment projects in 1982, up about 7 percent from 1981 levels if you don't adjust for inflation.

In addition to high interest rates, low capacity operating rates are depressing the demand for new plant and equipment. Capacity utilization rates have deteriorated steadily from over 85 percent of manufacturing capacity in early 1979 to a little more than 70 percent currently. During the 1974-75 recession the capacity utilization rate hit 69 percent (in March 1975), and there is still some chance that this dubious record will be broken this year. Recent activity compared with that of early 1979 looks quite dismal. Domestic auto sales are down nearly 50 percent, housing starts are down 50 percent, machine tool orders are down 65 percent, overall industrial production is off 10 percent and steel production is off 40 percent. High interest rates and low capacity utilization spell continued softness in plant and equipment spending until business is convinced that consumer spending is likely to continue its upward movement.

CONSUMER SPENDING

Retail sales have been sluggish so far in 1982. Economic history tells us that retail sales depend on employment, so until employment improves retail sales will remain low.

The drop in real activity has not been as bad yet as it was during the 1974-75 recession, when retail sales fell 3.6 percent, but it is already worse than the 1980 recession drop of 2.4 percent. Since consumption spending amounts to about two-thirds of national income, retail sales will dictate the pattern of the recovery.

We have predicted a flat second quarter and an upturn in activity in the third quarter of this year. This outlook is based on the cut in individual income taxes and the increase in Social Security benefits that is scheduled for July 1 of 1982. The $45 billion or so added to consumer income as a result of the anticipated tax cut and social security benefit increase is vital to a turnaround this year.

HOUSING

The two-year housing slump continued, and a recent survey of home builders indicated that somewhere between 50 percent and 70 percent of their numbers were operating in the red, and that they could go out of business in seven to nine months if conditions do not improve. With mortgage rates lingering in the 17 percent to 18 percent range (plus big points), the housing market is as sick as it has been since the 1930s.

Although the short-term outlook is somewhat improved for the housing industry, there is less optimism for the long-term. The Administration's supply-side orientation is pushing for investment projects that will increase productivity. The Financial Reform Act of 1980, together with the deregulation of the entire financial structure, could be detrimental to housing over the long run. Corporations are getting access to funds generated via money-market mutual funds, which purchase short-term corporate notes. It is fairly certain that a large proportion of them have been diverted from the thrift institutions. Reaganomics is supposed to restore productivity growth, and housing is not included in this program. It is possible that higher rates of individual and corporate saving, coupled with lower rates of government dissaving, will generate enough funds to have a viable housing market over the long term, but the old idea that housing is on par with Mom, Apple Pie and Baseball has begun to fade.

Just as low operating rates are putting a crimp in new investment plans, the disinflation in housing prices is going to cut down on housing as a major investment for most households. If interest rates remain high, so-called "creative finance" will remain a major source of housing finance. The financial chaos that could result from the bursting of creative finance balloon payments, coupled with the implicit decline in house prices that result from creative financing at below market rates, could wreak havoc with the housing markets for years to come.

AUTOMOBILES

The outlook for autos continues to be a major question. Domestic production fell 31 percent in the first quarter of 1982, which represented the lowest level of output in thirty years. The big three have scaled down their production plans for the interval through September 30 of this year, and anticipate they will make about 20 percent fewer cars in the second quarter of 1982 than they did a year earlier. The latest round of rebates by the major U.S. auto manufacturers didn't seem to do much good. After two months of price promotions that ended at the end of March, domestic deliveries declined in March 23 percent from a year earlier. Import sales were also off in March, declining 21 percent. General Motors began to offer interest rate subsidies instead of cash rebates, since it appears that consumers have viewed rebates as a permanent price reduction. When the rebates are lifted, consumers just wait for the future rebates which they know will be forthcoming.

Auto sales have been running slightly above a seasonally adjusted annual rate of 5.2 million units, a low level by any standard. There is some light at the end of the tunnel for the automobile sector, however. The level of production has been less than the level of sales for the first quarter of 1982, so that inventories of unsold autos declined significantly during the first quarter, even though demand was weak. We anticipate that about 6.5 million cars will be produced in the U.S. during 1982, including those produced domestically by foreign manufacturers.

INVENTORIES

One lesson that was well learned from the 1974-75 recession was "don't get caught with excessive inventories." Inventory liquidation began last December, with $3.4 billion slashed from outstanding inventories in trade and manufacturing. Another $2.1 billion was cut from inventories in January of this year, and this same amount was wiped out in February, with additional declines in March. These inventory declines amount to about half of the inventory buildup that occurred in the first part of the recession, between July and October of 1981. Recent efforts to get rid of unwanted inventory have had an important impact on the producer price index, and are probably the most important reason that producer prices have been declining over the last two months. However, excess inventories do not appear to be a problem for the U.S. economy at the present time. In fact, the improvement of sales anticipated with a second-half recovery will stimulate moderate inventory building once again.

NET EXPORTS

The net export sector has been ignored in many forecasts, but it has a powerful influence on the outlook that many forecasters have overlooked. For example, 84 percent of the decline in real gross national product during 1981 was due to a negative shift in the trade balance.

The major cause of our deterioriating net export position is, as it was last October, an overvalued dollar due to high U.S. interest rates. As long as the current short-term U.S. interest rates remain in the 14 percent to 15 percent range, the dollar is going to remain overvalued and the trade balance will continue to weaken. The European community, which only a few years ago was criticizing us for what they felt was too much easy money in the U.S., are now sharply critical of the "new post-1979" monetary policy, which caused U.S. interest rates to skyrocket. The European concern with high U.S. rates is real and vital, since their economies are not strong either. Any run-up of European interest rates will abort the recovery on the Continent. On the other hand, if they keep their interest rates low, the European currencies will continue to depreciate against the dollar, since relative rates of interest are one of the major determinants of exchange rates. The higher U.S. interest rates have caused liquid funds to be shifted from European assets into dollar assets. What really matters here are real, rather than nominal rates of interest. An investor can make an 8 percent inflation-adjusted return on dollars deposited outside the U.S., while, for example, similar investments in Swiss franc investments outside Switzerland yield only 3 percent after adjusting for inflation. This is the major reason that the dollar is strong at the present time.

Our merchandise trade balance has deteriorated seriously over the last decade, from a $2.6 billion surplus in 1970 to a deficit of $27.8 billion in 1981. During the last four months of 1981 we were running a $4.5 billion deficit *monthly* in our merchandise trade account. Even with these high deficits in our merchandise account, we have been able to sustain a surplus of about $24 billion in our net export account last year, which includes both goods and services. It is the service component of the income accounts in the foreign trade sector that has been saving us for the last few years.

SUMMARY

We are forecasting a recovery of moderate proportions in the second half of 1982. Good faith efforts by political leaders should bring the deficit to a level which will assuage fears in the financial markets that short-term rates will climb to 20 percent again. Unemployment rates will begin to moderate as the year progresses, but they will not be at politically satisfactory levels (for incumbents) before the elections. Consumer spending, stimulated by a tax cut and stabilized employment prospects, will lead to a slow improvement in business spending on inventories and, in time on the new productive resources the nation requires for long-term improvements. No boom is anticipated, and the downside risks for this forecast are considerable.

Indiana's Revised Outlook

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A forecast made in mid-May using the I.U. Econometric Model of Indiana (EMI) reveals that the Indiana economy will not perform as well as was previously expected (see the December *IBR*). The major reason for this downward revision is the prolonged weak performance of the U.S. economy. The previous Indiana forecast was predicated on GNP declining 1.0 percent from the last quarter of 1981 to the first quarter of 1982. Preliminary figures, however, indicate that real GNP actually dropped 3.9 percent. Also, it was expected that real GNP would increase by 1.0 percent in 1982:2, this has been revised down to 0.0 percent. The new expectation is that real GNP will increase by 3.0 percent and 4.0 percent in 1982:3 and 1982:4 respectively.

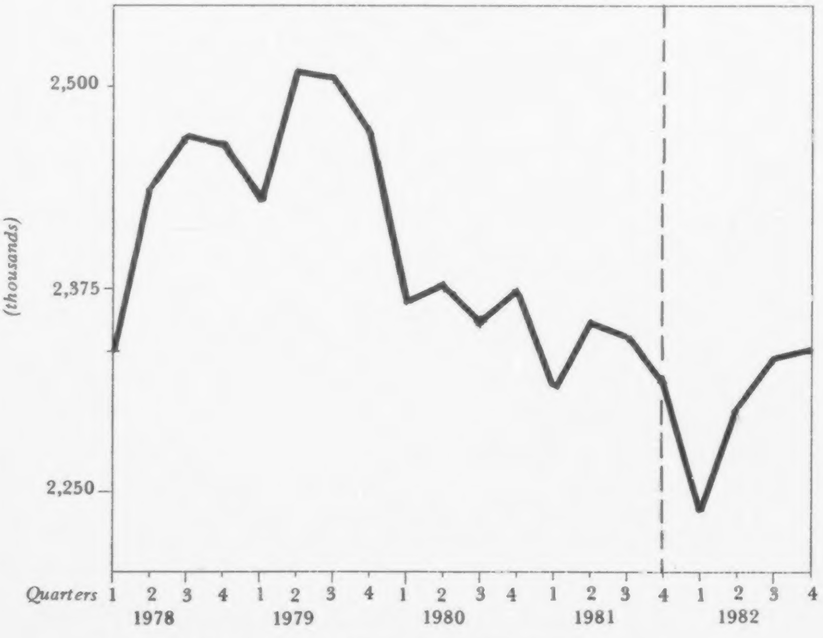
SUMMARIZING THE FORECAST REVISIONS:

1. Employment is expected to drop more from the fourth quarter of 1981 to the first quarter of 1982 and to increase less from the first to the second quarter of 1982 than the forecast made in mid-November indicated.

Figure 1

TOTAL EMPLOYMENT: 1978:1-1982:3*

(not seasonally adjusted)



*Data through 1981:4 are historical; later points are forecast values.

Table 1

EMI SUMMARY VARIABLES†

Variable	*1981:3*	*1981:4*	*1982:1*	*1982:2*	*1982:3*	*1982:4*
Personal income*	**54,685.00**	**55,200.45**	55,440.50	56,436.20	58,675.08	60,090.54
percent change (AR)	**8.32**	**3.82**	1.75	7.38	16.84	10.00
Real personal income*	**27,943.28**	**27,697.17**	27,473.00	27,651.25	28,331.76	28,519.48
percent change (AR)	**–.68**	**–3.48**	–3.20	2.62	10.21	2.68
Wages & salary disbursements*	**33,826.00**	**33,568.87**	33,623.19	33,891.22	35,211.49	35,962.90
percent change (AR)	**3.54**	**–3.01**	.65	3.23	16.52	8.81
Real wage & salary disbursements*	**17,284.62**	**16,843.39**	16,661.64	16,605.19	17,002.24	17,068.36
percent change (AR)	**–5.07**	**–9.83**	–4.25	–1.35	9.91	1.56
Nonmanufacturing employment #	**1,458.30**	**1,464.83**	1,416.84	1,453.81	1,474.48	1,482.10
Manufacturing employment #	**663.87**	**637.90**	613.68	618.50	630.91	639.75
Establishment employment #	**2,122.13**	**2,102.73**	2,030.53	2,072.31	2,105.39	2,121.85
Total number employed #	**2,346.23**	**2,317.53**	2,237.66	2,299.86	2,332.32	2,337.26
Percent unemployment (NSA)	**9.04**	**11.22**	13.41	12.61	11.69	11.05
Percent unemployment (SA)	**9.37**	**11.88**	12.30	12.59	12.13	11.70

† Boldface values are historical data; later values are forecasted.
1981:4 Values are Preliminary
AR = Annual Rate
* = Millions of Dollars SAAR
# = Thousands of Persons, not Seasonally Adjusted
NSA = Not Seasonally Adjusted
SA = Seasonally Adjusted

2. Growth in real personal income, which was previously expected to be positive in the first quarter of 1982 is now estimated to be negative before turning upward later in the year.

3. Real wages and salaries are expected to decline in both the first and second quarters of 1982. It had been forecasted that real wages and salaries would increase in both of these quarters.

EMPLOYMENT

From Figure 1 it is seen that the forecast level of employment for the first quarter of 1982 is below the level of employment in the four previous first quarters. This situation is also true when comparing the second quarter of 1982 to the prior second quarters and the third quarter of 1982 to previous third quarters. However the fourth quarter of 1982 breaks this pattern as the level of employment in the fourth quarter of 1982 is higher than the level of employment in 1981. Although one observation doesn't make a trend, the level of employment in the fourth quarter of 1982 does provide a basis for hope that the employment decline in Indiana has stopped.

From Table 1 it is seen that the increase of total employment from the fourth quarter of 1981 to the fourth quarter of 1982 is expected to exceed 19,000. Most of this increase, 90 percent or nearly 17,300 jobs, will be a result of an increase in non-manufacturing employment. Retail trade, service, and miscellaneous sectors account for the vast majority of the increase in non-manufacturing employment. Employment in retail trade is expected to increase by 6,500 people from 1981:4 to 1982:4, but will still be approximately 20,000 less than employed in 1979:4. The strong growth trend of service and miscellaneous, which was only slightly retarded by the recession, is forecasted to rise by a little more than 10,000 from 1981:4 to 1982:4.

Durable manufacturing is shown to rise (Table 1) by 3,860 from 1981:4 to 1982:4. No sector stands out in durable manufacturing in terms of rapid growth. The fastest growth in percentage terms is in instruments which grows by 2.6 percent. Other industries such as steel, and autos and parts, have some growth in employment but at a lower rate than in instruments. Non-durable manufacturing decreases by 2,070 employees. Almost 1,000 jobs are lost in food processing from 1981:4 to 1982:4, and 600 jobs are lost in chemicals in the same time period.

In Table 1 the seasonally adjusted unemployment rate is shown to peak in the current quarter (1982:2) at 12.5 percent. This rate, although high, would be still higher were it not for the fact that Indiana's labor force is declining. If the labor force were currently at its 1980:2 level, the unemployment rate would be 13.6 percent. The unemployment rate is expected to decline rather rapidly in the last half of 1982, ending at 11.7 percent in the fourth quarter.

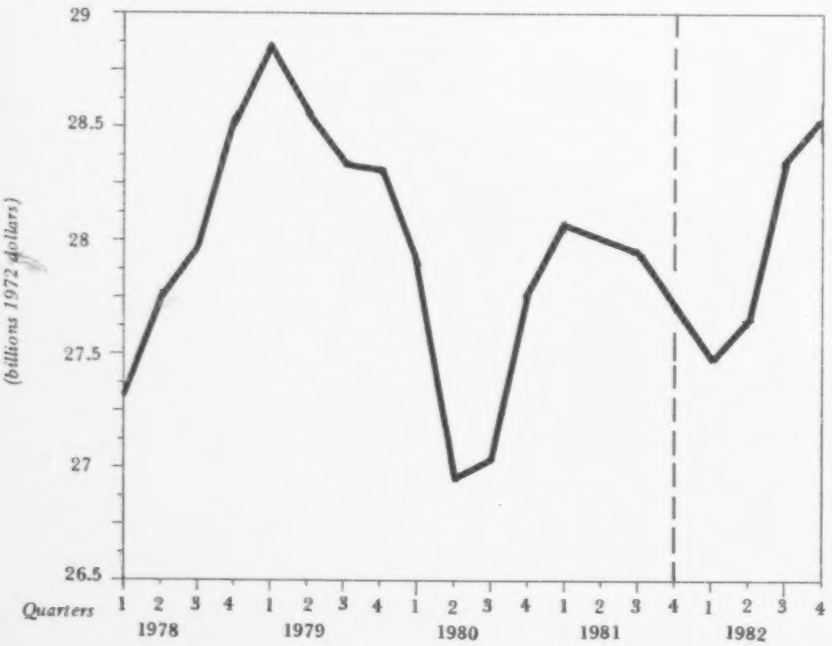
PERSONAL INCOME

Figure 2 shows that Indiana's real personal income has been declining since 1981:1 but may have bottomed out in 1982:1. The upturn in 1982:2 is a respectable 2.6 percent, but in 1982:3 the growth rate is a large 10.2 percent. This large jump in real personal income, coming out of a low point, is not unprecedented. The nadir of real personal income in 1980:2 was followed by a growth of 1.1 percent in 1980:3 but the next quarter (1980:4) had a growth rate of 11.3 percent.

All components of personal income increase from 1982:2 to 1982:3. Table 1 shows that real wages and salaries grew by 9.9 percent. Dividends, interest and rent are growing at a slightly lower rate, around 9.0 percent, while transfer payments are growing by around 12.5 percent from 1982:2 to 1982:3 reflecting the indexation in social security changes.

Figure 2*

REAL PERSONAL INCOME



*Data through 1981:4 are historical; later points are forecast values.

CONCLUSION

The turning point in Indiana's economy is approaching. In terms of real personal income the turning point is expected to occur in the second quarter of 1982. According to the unemployment rate, the economy will start improving in the third quarter of 1982. Finally, in terms of the actual number of people employed compared with the year ago levels, the economy begins improving in the fourth quarter of 1982.

Indiana's Business

RELATIVE UNEMPLOYMENT

Every recession brings with it concern about rising unemployment. This concern often focuses on the most widely publicized measure of unemployment: the unemployment rate. Indiana's unadjusted unemployment rate was 13.3 percent in February. Just how high is this statistic? To compare, consider that the state's average unemployment rate for the five years 1977-81 was 7.3 percent. If we divide the February rate by the five-year average rate we create a ratio showing the two rates relative to each other. For Indiana, this ratio equalled 1.82. That is, February's unemployment rate was 82 percent higher than the longer-run five-year average.

Table 1 details this ratio for each of Indiana's ninety-two counties. Column 1 lists the February 1982 unemployment rate. Column 2 lists each county's average unemployment rate from 1977 to 1981. Column 3 then, is the ratio of the two rates (Column 1 divided by Column 2). Ohio County's February unemployment rate was 31.3 percent, far and away the highest in the state. However, its long term average rate was also the highest in the state. Thus, Ohio County's ratio in Column 3 is only 35th highest, at 1.92. Thirty-four other counties have higher ratios. It can be argued that these counties have been hit harder by the 1981-82 recession than has Ohio County, even with its 31.3 percent unemployment rate. In February, Carroll County, for example, had an unemployment rate of 12.0 percent, which is below the state rate. Carroll County's ratio in Column 3 is 2.26 however, indicating February's rate is roughly two and one-fourth times greater than the county's five-year average. Carroll County is not alone. A total of twenty-five counties had February unemployment rates at least twice as high as their five-year average. The highest ratio belongs to Gibson County, where February's rate was 2.59 times larger than its five-year average. These twenty-five counties have been hit hardest in terms of relative unemployment during the recent recession.

Table 1

COMPARING UNEMPLOYMENT RATES

	Feb. 1982	5 Yr. Avg.	Col. 1/ Col. 2	Rank	Feb. 82/ St. Feb. 82	5 Yr./ St. 5 Yr. Avg.	Col. 5/ Col. 6
Adams	13.8	6.9	2.00	25	1.04	0.95	1.09
Allen	12.2	7.0	1.74	54	0.92	0.95	0.97
Bartholomew	13.9	6.8	2.04	20	1.05	0.93	1.13
Benton	10.0	5.6	1.79	49	0.75	0.77	0.97
Blackford	17.0	8.2	2.07	17	1.28	1.12	1.14
Boone	9.2	5.6	1.64	74	0.69	0.76	0.91
Brown	10.5	5.4	1.94	34	0.79	0.74	1.07
Carroll	12.0	5.3	2.26	6	0.90	0.72	1.25
Cass	17.8	7.6	2.34	4	1.34	1.04	1.29
Clark	15.3	7.6	2.01	22	1.15	1.04	1.11
Clay	15.7	7.0	2.24	7	1.18	0.95	1.24
Clinton	11.4	6.9	1.65	72	0.86	0.94	0.91
Crawford	17.2	13.4	1.28	92	1.29	1.84	0.70
Daviess	11.8	8.1	1.46	90	0.89	1.12	0.79
Dearborn	17.7	8.9	1.99	29	1.33	1.22	1.09
Decatur	10.5	5.8	1.81	47	0.79	0.79	1.00
DeKalb	18.5	8.5	2.18	10	1.39	1.17	1.19
Delaware	18.5	8.7	2.13	13	1.39	1.19	1.17
Dubois	12.3	6.2	1.98	31	0.93	0.86	1.08
Elkhart	12.5	7.7	1.62	78	0.94	1.05	0.90
Fayette	15.5	10.4	1.49	89	1.17	1.43	0.82
Floyd	14.7	7.9	1.86	42	1.11	1.08	1.03
Fountain	15.3	7.4	2.07	17	1.15	1.01	1.14
Franklin	18.9	9.4	2.01	22	1.42	1.29	1.10
Fulton	15.0	6.7	2.24	7	1.13	0.91	1.24
Gibson	14.5	5.6	2.59	1	1.09	0.77	1.42
Grant	14.6	9.3	1.57	84	1.10	1.28	0.86
Greene	15.5	9.5	1.63	76	1.17	1.30	0.90
Hamilton	6.7	4.0	1.68	65	0.50	0.55	0.91
Hancock	9.5	5.5	1.73	57	0.71	0.75	0.95
Harrison	16.3	8.8	1.85	44	1.23	1.21	1.02
Hendricks	6.3	4.0	1.58	83	0.47	0.55	0.85
Henry	19.4	11.0	1.76	52	1.46	1.50	0.97
Howard	20.5	10.3	1.99	29	1.54	1.41	1.09
Huntington	10.9	5.8	1.88	41	0.82	0.80	1.03
Jackson	16.8	8.4	2.00	25	1.26	1.15	1.10
Jasper	13.3	7.9	1.68	65	1.00	1.09	0.92
Jay	13.5	8.5	1.59	82	1.02	1.17	0.87
Jefferson	14.5	10.5	1.38	91	1.09	1.44	0.76
Jennings	14.3	6.7	2.13	13	1.08	0.92	1.17
Johnson	11.2	5.9	1.90	40	0.84	0.81	1.04
Knox	13.1	8.1	1.62	78	0.99	1.11	0.89
Kosciusko	10.1	6.1	1.66	70	0.76	0.84	0.90
Lagrange	11.4	6.6	1.73	57	0.86	0.90	0.96
Lake	14.9	8.6	1.73	57	1.12	1.18	0.95
LaPorte	13.5	7.6	1.78	51	1.02	1.04	0.98
Lawrence	21.4	9.1	2.35	3	1.61	1.25	1.29
Madison	22.5	9.6	2.34	4	1.69	1.31	1.29
Marion	10.8	6.9	1.57	84	0.81	0.94	0.86
Marshall	13.3	7.2	1.85	44	1.00	0.99	1.01
Martin	16.4	9.8	1.67	68	1.23	1.34	0.92
Miami	16.7	8.5	1.96	32	1.26	1.16	1.09
Monroe	14.1	7.6	1.86	42	1.06	1.04	1.02
Montgomery	9.8	5.7	1.72	60	0.74	0.78	0.95
Morgan	11.1	6.4	1.73	57	0.84	0.88	0.95
Newton	12.2	6.4	1.91	38	0.92	0.88	1.05
Noble	17.1	7.8	2.19	9	1.29	1.07	1.21
Ohio	31.3	16.3	1.92	35	2.35	2.23	1.05
Orange	18.2	10.8	1.69	63	1.37	1.49	0.92

Only six counties (Posey, Fayette, Daviess, Starke, Jefferson, and Crawford) had a February rate that was *not* more than 50 percent higher than their five-year average. These six counties, then, have faired well *relative* to the remaining counties.

Another way of looking at these same February unemployment figures is to compare them to the State's 13.3 percent unemployment rate. Column 5 is a ratio that does just that. It is the division of each county's February rate by the State's February rate. Six counties (Ohio, Switzerland, Madison, Lawrence, Howard, and Scott) have unemployment rates at least half again larger than the state. Seven counties (Montgomery, Hancock, Posey, Boone, Tippecanoe, Hamilton, and Hendricks) have unemployment rates equal to less than three-fourths of the state's unemployment rate. Current data alone does not tell the whole story. Column 6 shows for each county the ratio of its five-year average rate to the state's five-year rate. That is, it shows how a county's rate has compared, on average, to the state's rate over the past five years. By combining this

Owen	15.3	7.6	2.01	22	1.15	1.05	1.10
Parke	15.0	7.7	1.95	33	1.13	1.06	1.07
Perry	17.4	10.2	1.71	61	1.31	1.39	0.94
Pike	10.9	6.3	1.73	57	0.82	0.87	0.94
Porter	11.6	6.8	1.71	61	0.87	0.93	0.94
Posey	9.3	6.2	1.50	88	0.70	0.85	0.82
Pulaski	10.8	6.7	1.61	80	0.81	0.92	0.88
Putnam	13.7	8.2	1.67	68	1.03	1.12	0.92
Randolph	17.8	8.9	2.00	25	1.34	1.22	1.10
Ripley	15.3	8.5	1.80	48	1.15	1.16	0.99
Rush	13.8	8.2	1.68	65	1.04	1.13	0.92
St. Joseph	11.4	7.0	1.63	76	0.86	0.96	0.90
Scott	20.3	12.4	1.64	74	1.53	1.70	0.90
Shelby	12.9	8.4	1.54	87	0.97	1.15	0.84
Spencer	13.5	7.4	1.82	46	1.02	1.02	1.00
Starke	12.8	9.0	1.42	91	0.96	1.23	0.78
Steuben	13.8	7.2	1.92	35	1.04	0.99	1.05
Sullivan	12.6	7.5	1.68	65	0.95	1.03	0.92
Switzerland	25.1	10.3	2.44	2	1.89	1.42	1.33
Tippecanoe	8.7	5.3	1.64	74	0.65	0.72	0.90
Tipton	16.7	7.7	2.17	12	1.26	1.05	1.20
Union	12.9	8.0	1.61	80	0.97	1.10	0.88
Vanderburgh	11.4	6.5	1.75	53	0.86	0.88	0.98
Vermillion	17.3	8.2	2.11	15	1.30	1.13	1.15
Vigo	13.5	6.8	1.99	29	1.02	0.94	1.09
Wabash	14.2	6.9	2.06	19	1.07	0.95	1.13
Warren	10.0	5.0	2.00	25	0.75	0.68	1.10
Warrick	10.3	5.4	1.91	38	0.77	0.75	1.03
Washington	15.8	9.5	1.66	70	1.19	1.30	0.92
Wayne	16.1	9.0	1.79	49	1.21	1.23	0.98
Wells	12.0	5.5	2.18	10	0.90	0.75	1.20
White	13.7	6.6	2.08	16	1.03	0.90	1.14
Whitley	13.0	6.8	1.91	38	0.98	0.94	1.04
State	13.3	7.3	1.82	–	1.00	1.00	1.00

MAN-HOURS IN INDUSTRIAL PRODUCTION
(Seasonally adjusted data)

	United States				Indiana			
	Latest Month **(millions)**		*Percent Change From*		*Latest Month* **(thousands)**		*Percent Change From*	
			One Month Ago	*One Year Ago*			*One Month Ago*	*One Year Ago*
Manufacturing	**Mar.**	**764.3**	**–1.2**	**–5.4**	**Mar.**	**24,405.4**	**–5.7**	**–10.9**
Food	Feb.	65.0	2.0	–0.9	Mar.	1,380.8	–3.0	–2.6
Apparel and textiles	Feb.	77.3	19.6	–6.7	Mar.	371.0	–1.1	–3.6
Lumber and wood	Mar.	23.7	–2.9	–9.7	Mar.	594.4	–1.4	–17.2
Furniture	Mar.	16.8	–3.0	–7.3	Mar.	668.8	0.6	–11.1
Paper	Mar.	28.8	–2.9	–4.6	Mar.	522.0	–0.6	–12.1
Printing	Feb.	50.9	1.1	7.3	Mar.	1,085.0	1.0	–3.1
Chemicals	Mar.	44.1	–2.1	–3.2	Mar.	1,245.4	–5.5	1.5
Petroleum and products	Mar.	8.4	–1.5	–5.1	Mar.	165.2	–4.8	–18.0
Rubber and plastics	Feb.	28.7	3.9	–3.3	Mar.	1,145.4	–1.2	–9.8
Stone, clay and glass	Mar.	23.1	0.5	–10.8	Mar.	839.0	4.8	–9.6
Primary metals	Mar.	39.8	–2.7	–15.1	Mar.	3,832.1	–4.4	–17.5
Fabricated metals	Mar.	58.8	–1.7	–12.5	Mar.	2,094.1	–5.2	–8.5
Non-electrical machinery	Mar.	102.9	–3.8	–4.7	Mar.	2,793.5	–3.1	–11.0
Electrical machinery	Feb.	82.5	2.7	–1.5	Mar.	3,832.2	0.9	–11.9
Transport equipment	Feb.	68.5	3.1	–12.7	Mar.	3,030.0	2.1	–9.6

ratio with the ratio in Column 4 we get another measure of how the 1981-82 recession has affected each county's unemployment picture. Column 7 was calculated by dividing Column 5 by Column 6. Thus a ratio greater than 1 in Column 7 indicates that this recession has hurt that particular county more than the state in general.

Six counties (Gibson, Switzerland, Cass, Madison, Lawrence, and Carroll) have been especially hard hit by this most recent recession. All six have ratios of at least 1.25. That is, their unemployment rate relative to the state's rate has deteriorated significantly in recent months.

Policy attention is often directed toward those areas with the highest unemployment rates. For some areas, unemployment is a chronic problem. Measures that are designed for relief of short-term disequilibrium conditions might be most appropriate in those areas with the greatest divergence of their current unemployment situation from their more long-term condition. Other areas with chronic unemployment problems may have high current rates, but these may be of little difference from the long-term problems of those areas. Short-term efforts in such chronic unemployment areas may only delay long-term solutions.

Frank K. Kushman

INDIANA INDUSTRIAL ELECTRICITY SALES
(Seasonally adjusted in millions of kilowatt hours)

	March 1982	*Feb. 198_*	*March 1981*	*Percent Change From*	
				One Month Ago	*One Year Ago*
Anderson	21.5	27.6	21.1	−22.1	1.9
Bedford	10.9	10.7	15.3	1.9	−28.8
Bloomington	4.6	3.6	3.1	27.7	48.4
Columbus	17.3	17.7	20.4	−2.3	−15.2
Connersville	8.2	8.4	8.8	−2.4	−6.8
Crawfordsville	11.0	12.0	9.6	−8.3	14.6
East Chicago	23.2	23.2	30.6	0.0	−24.2
Elkhart	21.7	22.9	22.6	−5.2	−4.0
Evansville	47.4	45.5	45.2	4.2	4.9
Fort Wayne	42.5	45.2	49.3	−6.0	−13.8
Frankfort	8.1	8.8	7.3	−7.9	10.9
Gary	184.5	188.1	202.3	−1.9	−8.8
Goshen	8.6	8.8	9.0	−2.3	−4.4
Hammond	54.5	51.8	58.4	5.2	−6.7
Huntington	4.5	4.7	5.6	−4.3	−19.6
Indianapolis	338.5	315.8	316.2	7.2	7.1
Jeffersonville	5.6	5.7	6.8	−1.8	−17.6
Kokomo	57.3	59.7	76.0	−4.0	−24.6
Lafayette	36.2	36.4	36.5	−0.5	−0.8
La Forte	14.7	15.0	15.2	−2.0	−3.3
Logansport	7.0	8.0	9.7	−12.5	−27.8
Madison	2.3	2.4	2.5	−4.2	−8.0
Marion	29.2	28.6	30.6	2.1	−4.6
Michigan City	43.3	43.1	44.9	4.6	−3.6
Mishawaka	3.0	4.1	2.7	−26.8	11.1
Muncie	13.4	14.0	21.1	−4.3	−36.5
New Albany	4.4	4.6	4.9	−4.3	−10.2
New Castle	7.7	7.2	8.9	6.9	−13.5
Peru	4.6	5.3	6.2	−13.2	−25.8
Richmond	25.3	22.6	24.3	11.9	4.1
Seymour	2.5	2.7	2.5	−7.4	0.0
South Bend	26.0	28.4	28.7	−8.5	−9.4
Terre Haute	27.5	26.3	32.6	4.6	−15.6
Valparaiso	8.4	8.2	8.1	2.4	3.7
Vincennes	2.9	3.0	3.6	−3.3	−19.4
Wabash	5.6	6.5	7.2	−13.8	−22.2
Indiana	1790.2	1754.4	1937.2	2.0	−7.6

SOURCES: Data provided monthly by public and municipal electric companies.

UNITED STATES – INDIANA BUSINESS INDICATORS*

(Seasonally Adjusted Indexes Unless Otherwise Noted, Base Period: 1967 = 100)

		United States				*Indiana*		
		Latest Month	*Previous Month*	*One Year Ago*		*Latest Month*	*Previous Month*	*One Year Ago*
EMPLOYMENT								
Nonagricultural employment	Mar.	138.0	138.4	138.8	Mar.	115.6	116.4	120.5
Manufacturing employment	Mar.	99.6	100.3	103.8	Mar.	85.6	86.5	92.8
Average weekly hours (no.)†	Mar.	39.1	39.2	39.9	Mar.	39.1	39.4	40.5
Average weekly earnings ($)	Mar.	327.3	326.5	311.2	Mar.	380.4	384.2	372.2
Nonmanufacturing employment	Mar.	154.4	154.6	153.7	Mar.	135.7	136.8	138.9
Unemployment rate (%)	Mar.	9.0	8.8	7.3	Mar.	12.5	12.1	10.3
Unemployment-married males (%)	Mar.	5.5	5.3	4.1	–	–	–	–
Continued unemployment claims	–	–	–	–	Mar.	422.3	357.2	301.2
PRODUCTION								
Bituminous coal production	Feb.	169.0	169.7	172.3	–	–	–	–
Industrial electricity production	Dec.	142.7	143.9	152.4	–	–	–	–
Industrial electricity sales	–	–	–	–	Mar.	154.9	155.9	159.1
Manufacturing production	Mar.	139.7	140.5	151.6	Mar.	137.0	140.2	146.9
Raw steel production	Mar.	70.1	75.3	102.3	Mar.	113.2	115.5	138.5
CONSTRUCTION								
Construction activity-total	Feb.	297.5	300.4	328.5	Mar.	171.2	167.1	235.0
Residential housing starts	Feb.	74.2	69.7	100.7	Mar.	37.4	93.1	72.3
Residential expenditures	Jan.	306.9	313.6	396.6	Mar.	180.0	180.6	317.2
Nonresidential expenditures	Jan.	297.2	299.9	304.1	Mar.	184.3	188.6	235.8
Public expenditures	Feb.	199.2	201.1	238.9	–	–	–	–
Public works and utilities	–	–	–	–	Mar.	118.1	104.4	134.4
OTHER INDICATORS								
Personal income per capita ($)	Feb.	10,869.6	10,810.1	10,117.9	81:3	9,756.0	9,603.0	8,990.0
Passenger car sales (thousands)†	Mar.	777.0	633.0	963.0	Feb.	10.7	8.5	16.2
Year to date (thousands)	Mar.	1,945.0	1,168.0	2,375.0	Feb.	19.2	8.5	29.3

*Current indicators are preliminary and subject to revision

†Not seasonally adjusted

SOURCES: Data on Indiana construction from McGraw-Hill Information Systems Company; Indiana passenger car registration from R.L. Polk & Co.; indexes of raw steel production for the United States and Indiana courtesy of American Iron and Steel Institute, Washington, D.C.; all other data from U.S. and Indiana government agencies and Division of Research, School of Business, Indiana University.

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Indiana Regional Reports

In this issue . . .

Twice each year we ask economists from communities throughout the state to examine local business conditions. In past years the national and state outlooks statements were offered at the same time. Beginning with this issue, the local area reports will receive separate attention in the June and December issues of the *Indiana Business Review*.

Each report in the following pages suggests the truly difficult times faced by our communities. There is not a bouyant optimism about the future, but rather a grim expectation of continued sluggish performance as the nation slowly emerges from its current economic problems. Despite their collective lack of good cheer, we are indebted to our contributors for their willingness to participate in this semi-annual ritual. The current problems of the state are part of a longer term set of difficulties. The latest personal income data, reported in Indiana's Business, make it clear that today's problems are not novelties.

Editorial oversight: Last month's report on the Indiana economy benefited substantially from the efforts of Cary Harmon whose name should have been associated prominently with our forecast.

Morton J. Marcus,
Editor

INDIANA BUSINESS REVIEW

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INDIANAPOLIS

ROBERT J. KIRK

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If the economic recovery is to be led by consumer spending, then how might the Indianapolis economy be affected? Historically, expenditures for consumer durables such as appliances and cars tend to be postponable during a recession, hence they are the ones that receive the initial stimulus during recovery. Expenditures on consumer durables are based on the age of the stock of durables, the liquid assets and income of households, the age distribution of the population, and interest rates.

In the case of cars, the average age of the stock has lengthened considerably—a positive factor. Household liquid assets in the form of money market funds, cash, and savings accounts have increased—another positive factor. However, there has been a potentially negative factor arising from the age-specific pattern of the rates of change in real incomes of full-time workers. Specifically, the age-group 20-34 has experienced a significantly slower rate of increase in real income than those aged 35 and over. Those in the age-group 20-34 are the post-war baby boomers. The baby boom caused the labor force to grow more rapidly in these age groups, and as a result the change in income of workers in the younger age brackets was less than that of older workers. Thus, although there are relatively many young adults today (a positive factor for consumer durables), their income position may restrict their ability to pay for consumer durables—a negative factor. If a recovery initiated by consumer durables is to materialize, it may have to rely primarily on the willingness *and ability* to spend by the older workers.

What about interest rates? The combination of rising private credit demand and limited saving for *private* investment will result in continued pressure on real interest rates for the remainder of the year. Built into these relatively high real interest rates is uncertainty arising from future corporate financial instability. Therefore, continued pressure on interest rates will be a negative factor in the recovery of interest rate-sensitive expenditures including consumer durables. In summary, our scorecard lists both positive and negative factors in the evaluation of the strength of the durable goods recovery. Since Indianapolis has significant employment in durable goods production, one must be cautious about the recovery's strength.

COMPETITIVENESS OF THE INDIANAPOLIS ECONOMY

Some demand-side dimensions of the recovery have been examined. What about the supply side? Since a recovery will affect different regions of the economy differently due to different industry mixes and degrees of competitiveness of local firms, how might Indianapolis fare?

What has been the record? Table 1 shows changes in employment nationally and locally over recent business cycles. Employment change is measured by index numbers with the level of employment in November 1973 (business cycle peak), set equal to 100. Therefore, in Table 1, the 112.8 rating for Indianapolis in March 1982 means that the change in employment since November 1973 has been 12.8 percent.

The Indianapolis economy performed like the U.S. economy by not contracting as much as the rest of Indiana in the 1975 trough, and then extending the recovery to the national peak in January 1980 while Indiana peaked in March 1979. In the current recession, Indianapolis has contracted less severely than the rest of the state but somewhat more severely than the U.S., using the U.S. peak for comparison. If we assume the March 1982 data are near the current recession's trough, then in a trough-to-trough comparison, Indianapolis has compared favorably with the U.S. in total employment. However, in manufacturing and specifically in autos and parts, Indianapolis has fared less well.

Recessions are times when firms concentrate their production at their more efficient locations if possible. Therefore, it is useful to compare the competitive position of the manufacturing sector of Indianapolis with other metropolitan areas in the region. Table 2 shows the gross profit margin, a measure of competitiveness, for selected metropolitan areas.

Since the data in Table 2 are not adjusted for differences in industry mix among metropolitan areas, it is more meaningful to examine changes over time for each metropolitan area assuming that changes in industrial mix were minimal. Indianapolis improved its relative competitiveness slightly while the rest of Indiana declined.

Because Detroit, Indianapolis, and the rest of Indiana are heavily dependent on the motor vehicle parts industry (SIC 3714), it is interesting to examine its competitive position among other manufacturing industries. In Table 3, the motor vehicle parts industry is compared to all manufacturing in selected years in terms of wage rates, labor productivity, and gross profit margin.

Relative to all manufacturing, the measures of competitiveness for the motor vehicle parts industry showed deterioration over the period. The problems facing the industry did not begin in 1979!

How well has Indiana (Indianapolis data were not available) fared compared to other states in which significant employment in motor vehicle parts exists? Table 4 provides the gross profit margin for selected states.

The first three states dominate the industry but their shares of U.S. value added declined over the period. The latter three had relatively significant shares of U.S. value added and increased their shares over the period. Regression analysis of interstate differentials in gross profit margins indicates a negative relationship between gross profit margin and the wage rate, and a positive relationship between gross profit margin and labor productivity. Recent wage concessions and efforts to improve labor productivity are steps in the right direction.

Table 1

EMPLOYMENT INDEXES FOR THE UNITED STATES, INDIANAPOLIS, AND REST OF INDIANA AT SELECTED POINTS IN THE BUSINESS CYCLE

(November 1973 = 100)

Geographic Area	*Trough 3/75*	*Peak in Indiana 3/79*	*Peak in U.S. 1/80*	*Most Recent 3/82*	*Trough to Trough 3/75-3/82*
Total Establishment Empl.					
United States	98.3	114.2	116.9	114.8	+16.5
Indianapolis	97.4	115.8	117.1	112.8	+15.4
Rest of Indiana	94.8	110.0	105.8	97.0	+2.2
Manufacturing Employment					
United States	90.6	103.6	103.2	94.1	+3.5
Indianapolis	90.1	102.2	96.9	88.7	−1.4
Rest of Indiana	84.6	99.6	90.5	79.4	−5.2
Autos and Parts Employment					
United States	79.5	107.5	85.9	66.2	−13.3
Indianapolis	76.3	106.3	73.2	55.8	−20.5
Rest of Indiana	77.3	101.2	70.0	59.5	−17.8

SHIFTING THE ECONOMIC BASE

Attention has been focused on the existing economic base. What about introducing new kinds of activity into the economic base? Since 1954, the information occupations have become the largest sector of the U.S. labor force. Information workers are those concerned primarily with symbol-processing activities, as opposed to those engaged in the production or distribution of physical goods or services. Information workers include knowledge producers and distributors (scientific and technical workers, educators, and communication workers), market search and coordination specialists (insurance adjusters, sales representatives), and information processors and machine workers (computer equipment operators, bank tellers, stenographers). Much of the employment base of Indianapolis consists of information workers.

A dimension of the information occupations is employment in administrative offices and auxiliaries in manufacturing. Employees in administrative offices include those involved in program planning, company purchasing, company financial policy and accounting, general engineering, corporate personnel matters, and legal affairs. Employees in auxiliary units include research and development organizations, purchasing offices, and sales promotion offices that serve plants or central management.

I have examined trends and location determinants of administrative office employment in manufacturing. Both production and administrative employment are market-oriented (measured by personal income shifts among areas), and have become more so in recent years. I have examined factors affecting the location of administrative office employment, such as the location of production employment, personal taxes for a $50,000 income household (considered to be a factor in attracting technical people for R and D), disamenities of large urban areas, and climate. Only the location of production employment was significant. The tax, disamenities, and climate variables had the predicted signs but were not statistically significant. The $60 million Eli Lilly research laboratory to begin construction this fall in Indianapolis and the announced move of Texscan executives to Phoenix to be closer to manufacturing facilities in the Southwest are consistent with my analysis. In addition, analysis of population change among metropolitan areas indicates that it is related to the avoidance of disamenities of very large metropolitan areas and the attraction of moderate climates and areas with relatively low taxes for higher income households.

WANDER INDIANA AND INDIANAPOLIS!

Spend some of your increased disposable income this summer in Indiana and Indianapolis. Attend the National Sports Festival, July 23-31. See some of your state tax dollars at work in the form of a 20 percent increase in University plant capacity in the past two years on the IUPUI campus including the construction of the Natatorium and Track Stadium.

Table 2

GROSS PROFIT MARGIN IN MANUFACTURING, 1967, 1977, AND CHANGE 1967-77, BY SELECTED METROPOLITAN AREAS

Metropolitan Area	*1967 (U.S. = 100)*	*1977 (U.S. = 100)*	*Change 1967-1977*
Chicago	97.1	98.6	1.5
Indianapolis	95.6	97.3	1.7
Louisville	120.2	106.5	–13.7
Detroit	64.5	59.4	–5.1
St. Louis	78.9	81.6	2.7
Cincinnati	106.5	109.1	2.6
Columbus OH	100.1	108.7	8.6
Dayton	111.0	97.2	–12.8
Rest of Indiana	97.6	92.4	–5.2

Gross profit margin = (value added-payroll)/value of shipments.
SOURCE: U.S. Census of Manufacturers, selected years.

Table 3

MEASURES OF COMPETITIVENESS FOR MOTOR VEHICLE PARTS INDUSTRY (SIC 3714) IN SELECTED YEARS (All Manufacturing = 100)

Measure of Competitiveness	*1967*	*1972*	*1977*
Wage rate	126	132	137
Labor productivity	100	99	95
Gross profit margin	98	97	91

Wage rate = wages paid to production workers/number of production worker hours.
Labor productivity = value added/number of production worker hours.
Gross profit margin = (value added-payroll)/value of shipments.
SOURCE: U.S. Census of Manufacturers, selected years.

Table 4

GROSS PROFIT MARGIN FOR THE MOTOR VEHICLE PARTS INDUSTRY (SIC 3714) IN SELECTED YEARS AND STATES (United States = 100)

State	*1967*	*1972*	*1977*
Ohio	99	94	101
Indiana	n.a.	92	88
Michigan	96	97	86
North Carolina	152	172	162
Tennessee	n.a.	154	145
California	85	124	116

n.a. = not available.

Unless otherwise noted, information appearing in *Indiana Business Review* is derived from material obtained by the Division of Research for instruction in the School of Business and for studies published by the Division. Subscriptions to *Indiana Business Review* are available to Indiana residents without charge.

MUNCIE–ANDERSON

ROBERT R. JOST

Professor of Economics, Ball State University

As of the end of May, the mix of economic indicators suggests that the nation's economy remains rolling in a trough that lends substantial credence to the I.U. forecast of zero growth in real GNP for the second quarter of 1982. It should be noted that the moderate recovery forecast by I.U. for the latter half of 1982 assumes a further decline in interest rates for the balance of 1982. Given the fragility of financial institutions today, the fragility of private credit demanders, and the impending extraordinary demands for credit by the federal government, this assumption appears tenuous to say the least.

The current slump, which represents the second phase of a double dip recession which commenced in 1980, has impacted severely on the Muncie-Anderson SMSAs. In the December 1981 *IBR* this analyst forecast that unemployment in the Muncie-Anderson area would "continue its tortuous decent through the first quarter of 1982." During this first quarter Muncie and Anderson again received national publicity by being ranked among the top ten standard metropolitan statistical areas in unemployment in the United States. Seasonally adjusted unemployment figures for the two respective areas appear quite similar for the first third of 1982 with April registering a reduction in unemployment in both areas.

Unemployment Figures

1982	*Muncie*	*Anderson*
January	15.8%	19.5%
February	18.5%	20.1%
March	17.0%	20.3%
April	16.0%	19.1%

Given the present uncertainities of the nation's economy, it would be premature to imply from the April unemployment reductions that the local economies had resumed an upward cyclical thrust. Monthly unemployment data not only suffers many methodological shortcomings, but frequently masks significant underlying trends in a local economy. For example, measured employment over a longer time span reveals that employment in the Muncie SMSA declined from 54,900 in December of 1977 to 48,100 in April of 1982–a decline of 12.4 percent. Employment in the Anderson SMSA, which measured 59,300 in December of 1977, shrunk to 44,600 by April 1982–a whopping 25 percent decline. Not only has the relative decline in employment in Anderson doubled the incidence experienced by Muncie, but Muncie's employment now exceeds Anderson's by 3,500 workers–almost equivalent to Anderson's lead over Muncie 4½ years earlier. Of course much of the differential in the relative rate of decline in employment in the two SMSAs can be attributed to the much greater dominance of GM auto production in the Anderson economy. One might logically expect employment declines of such magnitudes to be paralleled by income declines, and it comes as no surprise that Anderson was ranked among 10 other U.S. cities as having experienced the lowest increase in current dollar personal income in 1980.

Over time such employment and earnings declines are likely to be reflected in demographic changes. Between 1970 and 1980, the population of Delaware County (Muncie SMSA) decreased 0.5 percent and Madison County (Anderson SMSA) increased a minuscule 0.6 percent in sharp contrast to the state's 5.7 percent increase, which in turn, was roughly half the growth rate experienced by the nation. The State Board of Health has conservatively estimated net migration at 90,000 during this decade, of which a disproportionally large number (18,600) are attributed to Delaware and Madison counties. A mid-1981 estimate of net migration in the early eighties found the trend to be accelerating and it could well be that Muncie and Anderson will continue to be associated with a disproportionate share of the exodus. School enrollment data tend to dovetail with this assumption, for first and second grade enrollment in Delaware County for the 1980-81 school year totaled 3,111, and that same group of students, second and third graders in the 1981-82 school year totaled only 2,944–a decline of nearly 5.4 percent.

Housing statistics supplied by Frederick Miltenberger & Associates for the 1978-82 time frame are equally distressing:

Deed Recordings in Delaware County

1978	4,949	–20.8%
1979	3,919	–12.0%
1980	3,450	–19.0%
1981	2,765	

The 461 deeds recorded during the first quarter of 1982 were 23 percent below those of the first quarter of 1981. The 130 new single family houses completed in the Muncie SMSA in all of 1981 was the lowest level in over a decade and represented only 28 percent of the 1978 number. 1982 single family completions will probably be even lower as high mortgage rates continue to deter prospective buyers. On the other hand, multiple family housing completions in Muncie, lumping together those financed privately with government subsidized units, experienced a sharp freshet in 1981. They should do less well in 1982. The vacancy rate, however, which has been relatively stable the last few years may well be in the throes of moving significantly upward in 1982.

Business is languishing for many of the numerous small machine tool shops situated in the Muncie-Anderson SMSAs. Owners report that their order backlogs have virtually vanished, that they do business on a day-to-day basis with reduced employment, and they offer little optimism with respect to a near term turnaround.

The latest reading of the Muncie Business Index (March 1982) registered a meager 109.44 over its 1967 base of 100. This reading was 10.4 percent lower than

March 1981—hardly symptomatic of a vigorous economy.

What is ahead for the Muncie-Anderson economies for the balance of 1982? As autos and housing have traditionally provided much of the main thrust in previous recoveries from recession, the continuing weakness of these key sectors is most disconcerting. Although there have been some callbacks of auto workers in Muncie and Anderson during March and April, as reflected in the previously cited unemployment data, it will require a sustained upturn in domestic auto sales even to partially alleviate the depressed economic conditions in the area. Over the last three years the rate of growth of cars in private use has dropped well below its historical trend line as consumers had to spend an increasing share of their incomes for energy and housing services. As a consequence, the average age of the cars has risen, and it seems likely that some pent-up demand will be felt in the market place, given the improving financial position of the consumer. Nevertheless, with the problems confronting the U.S. auto industry, it remains to be seen whether it has the ability to compete in price and quality with foreign imports. G.M.'s decision to replace its Chevrolet Chevette line with a Japanese produced sub-compact appears to be an admission that even with a favorable labor contract, it cannot compete in the building of subcompacts. The 1980s are not likely to witness a return of the U.S auto industry to its preeminent position in the American economy; the degree of dependency of Muncie-Anderson upon auto production will continue to decline.

FORT WAYNE

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The thrust of the initial (December 1981, *IBR*) economic forecast for the Fort Wayne area economy for 1982 remains intact: "Employment is expected to trend downward through the second quarter of 1982 before turning upward." As forecasted, the spurt in area employment during the third quarter last year was short-lived. Not only did the economy relinquish the approximately 2,500 jobs gained during that quarter, but it has given up an additional 5,500 jobs since then. As of April 1982, total wage and salaried employment in the Fort Wayne SMSA (Adams, Allen, DeKalb and Wells Counties) is a seasonally adjusted 164,400. In March 1979 employment peaked at 185,300; thus the area economy has relinquished almost 21,000 jobs in three years—an 11.3 percent contraction. During the same three year period, unemployment has more than tripled from 4.1 to 13.2 percent (seasonally adjusted) as the local economy became "unhitched" from the national economy.

Sixty-five percent of the decreased employment has occurred in the durable goods portion of the manufacturing sector, although durable goods accounted for only 28 percent of area employment in March 1979.

Eight thousand of the 12,900 jobs lost in durable goods manufacturing occurred in the transportation equipment industry. International Harvester's particular travails are well documented; however, the entire heavy duty truck industry has been in a slide since the beginning of 1979—which coincides with the slide in the area economy. International Harvester's market share for heavy duty trucks has varied substantially during this same period, rising from a post-strike depressed level of 24 percent in the third quarter of 1980 to a high of 33 percent near the end of 1981, before easing to 28 percent currently.

The sectors of likely strength and weakness for 1982 outlined in the original forecast also remain intact. Electrical machinery employment will continue to grow primarily as a result of the recent growth in Federal defense expenditures. Of the 20 industries tracked in area employment, electrical machinery and health services were the only two having increased employment in the last year. Transportation equipment, contract construction and government have been among the weakest industries and will remain so through year-end. As the national economy recovers in the last half of 1982, it will create turnaround situations locally in the nondurable goods sector, and the finance, insurance, and real estate industries. Wholesale and retail trade will exhibit strength, especially near year-end since 1982 Christmas sales will be strong.

Currently, the original forecast of 1982 single family new housing construction in Allen County appears almost euphoric. Through May, 58 building permits have been issued; thus the original forecast of 500-600 starts is unrealistic. The dual prerequisites of forecasting mortgage rates and determining the substantial inventory of existing housing for sale make new construction forecasting extremely difficult. Hopefully, a forecasted pickup in construction this fall will bring starts for the year into the 300 range. This will be the third consecutive year activity has been below a thousand, starkly contrasting with the nine previous years which were all above a thousand.

The summary is a repeat from the December 1981, *IBR*: "The Fort Wayne area economy is forecast to have nominal growth in 1982, but the direction at year-end will be distinctly upbeat."

GARY-HAMMOND
EAST CHICAGO
(Calumet Area)

LESLIE P. SINGER

Professor of Economics, Public and Environmental Affairs, Indiana University Northwest

As so many of our peers have done, we too underestimated the depth, though not the timing, of the current recession. As reported by local papers in November 1981, the Northwest Indiana Econometric model predicted a regional lower turning point in the third quarter of 1982. More recent analysis appears to confirm earlier predictions; signals now, however, are less clear. For example, the real money indicators turned around in the third quarter of 1981 projecting, with a 9-11 months lead, an August to September 1982 upturn. On the other hand, net change in inventories, change in liquid assets, and other intermediate indicators are continuing their descent. Autos, various investment series, etc., which are the driving variables of our model, are not expected to reach their pre-recession peaks until the end of 1983 or the beginning of 1984.

Table 1 gives the latest forecast. The principal conclusions are that this region appears to be in a shallow cycle, which will leave the local economy's index of overall business activity considerably shy of its May 1979 peak for most of 1982 and even 1983. As a matter of fact, if we take March 1981 as the local upper turning point of the mini-cycle of 1980-81, we estimate that the level of May 1981 will not be attained by the local economy until about August or September of 1982. One has to note that the 1981 recovery from the 1980 downturn was incomplete; it failed to recoup over 50 percent of the jobs which were lost during the 1979-80 downturn.

Table 1

NORTHWEST INDIANA DATA

	Actual		*Forecast in 1000, Annual Rates*		
	1982 March	*1982 June*	*1982 Sept.*	*1982 Dec.*	*1983 March*
Total Employment	238.4	242.1	243.8	244.9	252.2
Manufacturing–Plus Construction	96.1	100.4	100.96	102.05	107.5
Steel Employment	56.9	57.1	56.2	55.9	61.8
Nonmanufacturing (Excluding construction and excluding government.)	110.9	113.3	111.9	116.4	115.5
Government Employment	31.4	32.1	32.4	31.9	31.0
	Actual		*Forecast in Billions of Dollars*		
Annual Payroll of Manufacturing & Construction	$2.735	$2.813	$2.931	$3.012	$3.141
Steel Wages	$1.653	$1.762	$1.881	$1.851	$1.941
Nonmanufacturing Wages, (Excluding construction and government.)	$1.445	$1.495	$1.513	$1.501	$1.496
Government Wages (estimated)	$.653	$.659	$.683	$.674	$.699
Total Wage Bill	$4.833	$4.967	$5.127	$5.187	$5.336
Real Index of Business Activity (May 1979 = 100)	88.3	89.9	91.1	91.5	92.8

Table 2

COMPARATIVE GROWTH RATES

	May 1970	*May 1975*	*May 1977*	*May 1979*	*May* 1982*
Total Establishment Employment (000)	224.9	231.3	248.5	263.6	238.4
Percent Change	–	2.85%	5.92%	6.07%	–9.56%
Other Manufacturing Employment (000)	41.7	35.0	37.1	37.9	26.0
Percent Change	–	–16.06%	+1.06%	+2.15%	–31.39%
Steel Employment (000)	66.2	60.8	64.6	68.3	56.9
Percent Change	–	–8.15%	–6.25%	+5.72%	–16.69%

*Estimated

The significance of the current projection is that, if correct, the local economy's overall performance will remain below the 1979 peak for at least two years. Moreover, there are fears that the rebound will be incomplete, causing a quasi-permanent underutilization of both human and physical resources. There are some indications—and we hope we are wrong—that Lake County as a whole, unlike Porter County, will complete most of the 1980-1990 decade as an industrially stagnant region.

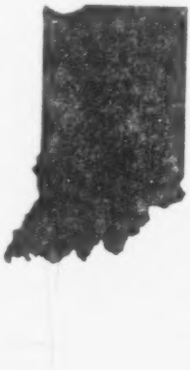
There are fundamental reasons why the local economy is likely to be less vibrant than some other regions of the country. There is in progress a global retrenchment of heavy industry in the Benelux countries, England, France, as well as in the U.S. Accelerating labor costs, rising energy prices, faltering human resource management, unpredictably volatile interest rates and a gradual shift in consumer tastes away from goods absorbing large quantities of steel, may force the industrial giants to operate and expand only the more profitable capital installations. In some respects, the U.S. is less flexible than our European competitors. Steel, for example, had obsolete plants operated by their best and most experienced human resources along with more advanced plants operated by less experienced and often insufficiently motivated human resources. The higher fixed asset holdings (homes, etc.) of the wealthier American steel worker makes for a less mobile labor force which is more apt to apply political pressure to retard the necessary restructuring of the industrial base (steel, autos, etc.).

The Northwest Indiana Region is experiencing its worst liquidity crunch of the decade, partly as a result of commercial and residential overexpansion. We are not well poised for a period of disinflation, however short-lived it may turn out to be. Recent entrepreneurship in Black and Latin urban quarters is in considerable danger of failure if the progress of the recovery remains slow and shallow, as is our current prognosis.

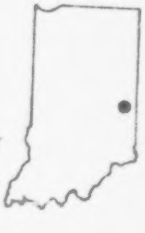
New and expanding firms in non-urban Northwest Indiana will continue to be reluctant to hire high risk employees from the labor-surplus centers, causing further deterioration and slower recovery in urban Lake County. We predict continued relatively high unemployment for most urban centers through 1983. Government programs such as CETA, which perpetuated bad work habits and an attitude of dependency, have unintentionally expanded the core of high-risk labor which, in a shallow recovery, will continue to undermine urban growth.

Progress in Northwest Indiana depends on the ability of steel, the principal export sector, to attract high-wage, steel-related processing firms, whose payrolls fuel the commercial, financial and service sectors of the regional economy. Table 2 provides some comparative growth rates for area steel and other manufacturing. The dramatic decline in other steel-related manufacturing jobs suggests a dwindling role of local steel as an industrial magnet.

If, as expected, monetary markets stabilize in 1983-84, and a more realistic bargaining stance is taken by steel and auto workers, capital goods industries may revive, and this region may enter a new and possibly robust phase of growth in 1983-84 and beyond.



RICHMOND



ASHTON I. VERAMALLAY

Assistant Professor of Business and Economics, Indiana University East

The national recession continues to afflict the Richmond area economy. Industrial recalls of unemployed workers are slow and erratic. If this trend continues the unemployment rate will remain relatively high since one out of every two jobs in the local area is in manufacturing. The current unemployment rate is about 15 percent.

The building trades and automotive outlets, in particular, are being affected by high interest rates and weak consumer demand for their respective products. Fewer people are buying new cars every two or three years. Some consumers are deferring purchases because they can realize high interest income in money market certificates. Also, many people, because of job uncertainty, are afraid to make long-term financial commitments in housing and automobiles.

Retail sales, however, are likely to perk up when the additional 10 percent personal income tax cut becomes effective in July. As consumers release their pent-up demands for durable goods the local economy can expect some positive impacts. Such impacts, aided by the drop in the inflation rate, can eventually brighten the employment outlook for the rest of the year.

A caveat is in order at this point. At present there is an industrial dispute between the local PRC recording company plant and the International Brotherhood of Electrical Workers (IBEW) Local 2043 over wage contracts. If other unions join the IBEW in solidarity, this will disrupt the local economy. It may retard the hoped-for local recovery.

SOUTH BEND

ELKHART

DAVID X. KOLK

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OVERVIEW

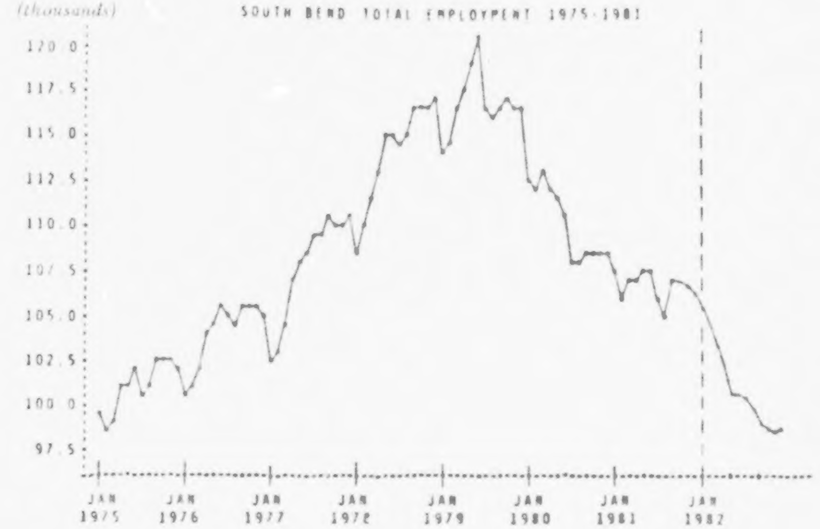
The regional economy continued to deteriorate during the first half of 1982, with manufacturing employment leading the decline. Total employment in the South Bend SMSA has fallen from a peak in May 1979 of 120,000 to 105,000 in January 1982. Total employment in the Elkhart SMSA has fallen from a peak in April 1978 of 82,500 to 66,500 in January 1982. The slide in total employment reflects the impact of the downturn in the transportation sector that began in mid-1979 and the general weakening of the national economy.

The second half of 1982 does not promise any significant improvement in the overall employment picture. The manufacturing and construction sectors in both regions will continue to be weak, with the nonmanufacturing sectors remaining flat.

ST. JOSEPH COUNTY

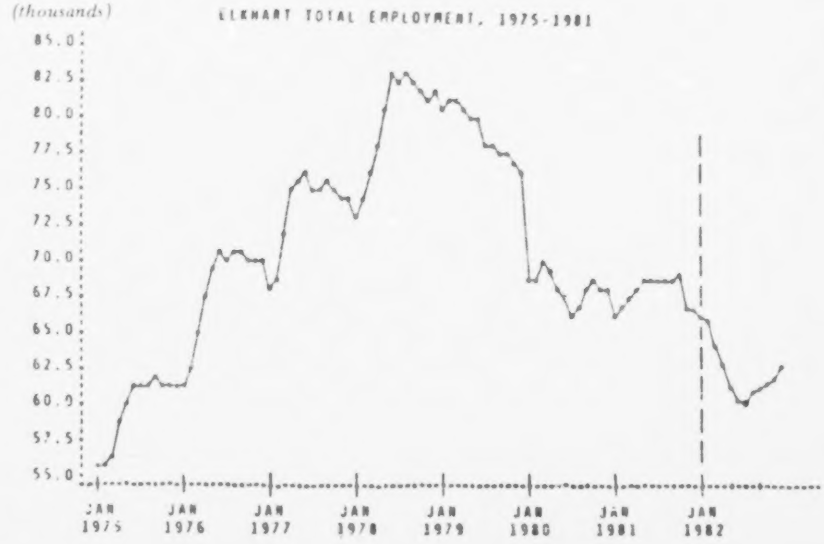
Total employment in St. Joseph County has declined 12.5 percent since its 1979 peak (see Figure 1). The decline in manufacturing employment accounts for the largest proportion of the total employment decline. Construction related employment has declined by almost 50 percent in the last three years (from 6,500 to 3,800), due to the virtual collapse of residental construction. Nonmanufacturing employment, while projected to decline in 1982, has been increasing in the last half of 1981. The behavior of these major employment components reflect the changing composi-

Figure 1



SOUTH BEND TOTAL EMPLOYMENT 1975-1981

Figure 2



ELKHART TOTAL EMPLOYMENT, 1975-1981

tion of the St. Joseph County economy, which is shifting away from a manufacturing oriented employment base towards a service oriented employment base.

An employment forecasting model of the region, still in the early stages of construction, was used to prepare forecasts of the regional economy. The results indicate that even if the national economy begins to improve in the third quarter, the effects will not be felt in South Bend until the fourth quarter. The primary reason for the lag is the depressed state of the automobile industry. It takes three to four months for changes in automobile sales to fully have an impact on St. Joseph County. Domestic sales have continued to decline; and while industry analysts predict auto sales will improve once the national economic picture brightens, the effects of higher auto sales will take longer than usual to improve the employment situation in St. Joseph County.

Nonmanufacturing employment will continue to be flat, with perhaps a small decline due to interactions with the manufacturing sector. Construction employment will continue to decline. Any seasonal effects will be small.

There are some possible bright spots in the St. Joseph economy. The ability of AM General to compete successfully for government contracts will provide 250-500 manufacturing jobs and another 250-500 nonmanufacturing positions. The South Bend ethanol plant will soon enter the construction phase and will provide some needed construction jobs. But these are two bright spots in an otherwise poor employment outlook.

ELKHART COUNTY

Total employment in Elkhart has fallen by 20 percent since its peak in 1978. The reliance of the Elkhart economy on the recreation vehicle industry hurt the region in the late 1970s, but the decline in gasoline prices has spurred the industry, giving the area a brief employment upturn (see Figure 2). Nonmanufacturing employment has remained stable in Elkhart, with construction and manufacturing sectors responsible for the cyclic employment behavior.

The prospects for the rest of 1982 show no significant improvement. Manufacturing employment should increase, lagging the national recovery. Nonmanufacturing employment will turn up with the national economy. Construction employment is expected to remain low, with no seasonal upturn.

SUMMARY

A return to the economic prosperity of the mid-1970s seems a few years away. The St. Joseph-Elkhart region is heavily dependent on manufacturing in the slower growing sectors of the national economy. Price stability, lower energy prices and lower interest rates will help stabilize the regional economy. It will take a redevelopment program that lessens the area's dependence on traditional manufacturing sectors to ensure another period of sustained economic growth.

KOKOMO

DILIP PENDSE

Assistant Professor of Economics, Indiana University at Kokomo

Forecasting economic trends in North Central Indiana has become more difficult than solving Rubik's Cube! With the way the national economy is performing, I am somewhat pessimistic about the duration and the strength of such economic recovery.

In Kokomo and Marion the unemployment rates have remained in the middle to upper teens for several months now. Although the Fisher Body, General Tire, and RCA plants, Marion's three major employers, have recalled many laid-off workers, many more still remain jobless. Nearly 50 percent of the hourly workers at Marion's Dana plant are without jobs. In Kokomo, nearly 1600 workers, or 14 percent of the normal work force at Delco Electronics, Kokomo's largest employer, are on indefinite layoffs. Many laid-off workers at the Cabot, Continental Steel, and Chrysler plants in Kokomo have not yet been called back to work.

The housing sector also is not doing well. Data on home sales, building permits issued, and the demand for home mortgage and home improvement loans in Kokomo during the first quarter of 1982 suggest that Kokomo's longest and roughest economic ride since the 1973-75 recession is not yet over. High interest rates have aborted any upturn in the housing sector.

North Central Indiana's economy is closely tied to the national trends in the manufacturing sector in general, and the auto sector in particular. However, as of this writing, I have not seen strong, hopeful signs suggesting a "robust" upturn in either sector at the national level. The tax cut in July will certainly help stimulate the economy. However, not much of the new take-home money will be likely to go into purchase of new automobiles. In other words, the tax cut will not be of much benefit to the auto sector. Because of this and prevailing high interest rates, any recovery in the auto sector is likely to be unspectacular. The interest rate deadlock has all but stalled household spending on big ticket items and homes.

In conclusion, the forecast for the remaining six months of 1982 is not cheerful. The overall economic recovery will be moderate. The housing sector will not show much vigor. The bright spots I see are in segments of the retail sector, because of improved real take-home income.

EVANSVILLE

MAURICE TSAI

Professor of Economics, University of Evansville

The Evansville economy began 1981 with a rather strong performance, but in the second quarter it entered the 1981-82 recession by posting a 5.7 percent decline to 102.13 as measured by the Evansville Area Business Index (see Table 1). The Index edged upward in the third quarter by 3.4 percent, but it slipped again by 1.5 percent in the fourth quarter. The declining trend continued in the first quarter of 1982 when the Index was lowered to 102.80. The lowest point was January 1982 (101.56), which was comparable to the lowest months (June and July) of the 1980 recession. From January to March, the Index did rise to 104.46, but the state of the regional economy in the second quarter is sluggish. Nationally, the second quarter is expected to be the trough of the 1981-82 recession, so a tremendous upward movement is unlikely for the Evansville region.

For various sectors of the Evansville economy, some new developments can be observed, but most sectors maintain a declining tendency as expected in a recessionary period. The local industrial production index reached its lowest level in the second quarter of 1981 and since then recovered by about 6 percent by the end of the first quarter of 1982. Weak consumer buying nationally, especially in durable goods, and low housing construction accounted for the weakness in manufacturing activities. Still this sector was not hit as hard as other regions in Indiana which rely even more heavily on the automotive industry.

The retail trade sector improved in the third quarter of 1981 by about 2.5 percent when the Eastland Mall was opened. Since then retail activities dropped by about 1.3 percent through the first quarter of 1982. High unemployment and high interest rates worked together against the improvement of retail trade, especially in local automobile sales. The sales of new cars and trucks has been less than half of the 1977 level in the last two quarters.

Table 1

EVANSVILLE AREA BUSINESS INDEX
(Revised; 1977 = 100)

Period	*Industrial Production*	*Trade & Services*	*Construction*	*Transportation*	*Finance*	*Employment*	*Composite Index*
			Monthly Index				
1981 Sept.	110.60	104.14	99.71	93.43	96.68	105.91	105.55
1981 Oct.	112.85	100.96	103.16	96.08	96.91	105.62	105.53
1981 Nov.	104.33	101.25	105.57	97.73	93.74	105.46	102.68
1981 Dec.	107.73	103.15	97.97	95.54	98.13	106.12	103.94
1982 Jan.	103.44	101.86	91.73	98.93	99.03	104.80	101.56
1982 Feb.	108.99	101.05	86.58	94.62	101.86	103.51	102.39
1982 Mar.	112.29	101.73	94.05	94.08	103.99	103.49	104.46
			Quarterly Index				
1981 I	114.55	103.72	113.74	102.36	100.10	105.99	108.30
1981 II	102.09	100.61	108.55	98.88	97.27	105.02	102.13
1981 III	110.37	103.01	106.00	97.68	97.37	105.96	105.59
1981 IV	108.30	101.79	102.23	96.45	96.26	105.73	104.00
1982 I	108.24	101.55	90.79	95.88	101.63	103.93	102.80

Residential construction has been in its third year of depression. Locally the level of activity reached a new low in January and February 1982 at about 15 percent of its 1977 activity level. Some improvement was observed in March when the activity level rose to 30 percent of the 1977 level. Recent financial assistance to the housing industry by the state government, and federal assistance bills in the Congress are badly needed by this sector. One new adverse development in the first quarter of 1982 was the significant weakening in business construction, which had remained robust during the 1980 recession. Business construction declined by 15 percent during the first quarter and may remain low for the second quarter this year. Together these effects explain how the Construction Index slipped below the 1977 level for the first time in four years.

Another new development in the first quarter was the beginning of some recovery for the financial sector. This sector, after two years of decline, showed signs of a turnaround in February and March. Certain portions of the financial sector may have overcome a critical stage and moved toward improved conditions.

At this time (June 1982), the only encouraging factors in the Evansville economy are the sustained activities in the manufacturing sector and a seemingly improved financial sector. It is still likely that the national and regional economies will begin their slow recovery in the second half of this year. At this stage, the inflationary threat seems to be under control (six percent this year), and the interest rate may go down by one or two points by the end of this year if most of the uncertainty about the near-future economy is removed. In short, a slow recovery in the second half remains very likely if no new adverse factors emerge.

JEFFERSONVILLE-NEW ALBANY (Louisville Area)

FAY ROSS GRECKEL

Professor of Economics, Indiana University Southeast

The 1981-82 recession is still very much in evidence in the five-county Louisville metropolitan area. After a sluggish but fairly stable performance during the first nine months of 1981, economic conditions deteriorated rather sharply in the final quarter of the year. Although some sectors have since showed modest improvement, much of the economy remains at or below its depressed year-end level.

As is true nationally, the worsening economic conditions have spread beyond the housing and auto-related sectors. Nevertheless, these are still the hardest-hit areas, followed by other manufacturing industries and government sector employment.

Some of these developments are indicated in Table 1. The industrial production index fell sharply in late 1981, reaching a low of 98.1 for the fourth quarter. After a slight rebound during the first quarter of this year, it fell again to 97.6 in April. Comparing today's index with pre-recession levels, we observe the index declining from 125.5 in the first quarter of 1979 to 102.3 in the first quarter of 1982.

The construction index also plummeted from an average of 128.2 for the first nine months of 1981 to a 102.8 average in the succeeding seven months. This contrasts with a 150.6 average for 1979. High interest rates are keeping both construction and real estate severely depressed. Construction employment, which reached a peak of 22,300 workers in the summer of 1979, was only 16,500 this April.

Single family homebuilding is a rare activity these days. In 1981 only 600 single family units were begun in Jefferson County (including Louisville), Kentucky; during each of the preceding nine years from two to six times as many houses were built. Some multifamily residential construction, including condominiums, is underway, along with considerable repairing and remodeling. Work continues on the Galleria and several other large downtown Louisville projects. New Albany is beginning to develop its riverfront area for public recreation purposes, and in Clark County construction of the oft-postponed riverport, the Clark Maritime Center, is finally starting.

In 1981 the local economy was buoyed somewhat by an encouraging amount of industrial and commercial expansion. At least 330 enterprises announced or undertook expansion projects totaling an estimated $395,000,000 in planned investment. When completed, these various projects could add some 9,000 jobs to the local labor market. This planned expansion included more than new construction. Conversion of the Ford LTD plant to Ranger truck production accounted for a substantial portion of the investment total. The welcome start-up of the new assembly line in January meant the recovery of some of the Ford production jobs lost over previous months and years and should not really be viewed as a net addition of jobs.

Automobile sales remain weak. In 1981 the number of cars sold in Jefferson, Clark, and Floyd Counties was 4 percent below the poor 1980 levels. The current year began in even worse shape, with first quarter car sales 24 percent lower than in the first quarter of 1981. Sales improved in April, helping to boost the trade and services index slightly above its 1980 and 1981 levels.

Metropolitan area employment continues to decline (see Table 2). The 376,000 jobs held during the first quarter of 1982 in enterprises located within the five-county metropolitan area was 9,000 jobs less than were recorded in the first quarter of 1981, and 19,000 below the 1979 first quarter total. Instead of the usual seasonal rise in the early spring, April's employment level fell below 370,000, and the unemployment rate for area residents rose to a seasonally adjusted

Table 1

ECONOMIC INDEXES, LOUISVILLE METROPOLITAN AREA, 1979-1982
(Seasonally adjusted; 1967 = 100)

Annual Averages	*Industrial Production Index*	*Trade & Services Index*	*Construction Index*	*Financial Index*
1979	120.7	150.1	150.6	365.2
1980	107.1	141.1	122.8	390.2
1981	105.8	142.7	122.3	401.0
Quarterly Averages				
1981:				
Q1	107.3	148.8	130.2	388.3
Q2	111.6	141.7	131.2	381.1
Q3	106.1	141.6	123.3	393.7
Q4	98.1	138.7	104.4	440.8
1982:				
Q1	102.3	141.1	103.2	442.7
Apr.	97.6	143.2	97.1	427.8

SOURCE: Research Department, Louisville Area Chamber of Commerce.

13.4 percent. The unadjusted rate was 11.8 percent. However, if the Ford Ranger plant had not closed for a week due to a parts shortage, the unemployment rate for April would have been 12.6 percent rather than 13.4 percent.

Employment in April was 17,600 jobs lower than in April 1981. Firms manufacturing machinery or transportation equipment (including GE, Ford, and Jeffboat) accounted for more than half of this difference. The other major category of job loss was in government employment, which showed a decline of 4,600 jobs.

Employment in firms located in Clark and Floyd Counties remained fairly steady through most of 1981, but during the fourth quarter jobs in those two Indiana counties also declined. Employment for the first quarter of 1982 was 4,000 jobs lower that it had been a year earlier—nearly a 10 percent reduction. As in the metropolitan area as a whole, almost all of the decline was in durable goods manufacturing or government sector jobs. By April the unemployment rate for residents of the two Indiana counties reached a seasonally adjusted 14.8 percent.

Looking ahead, on the positive side we have continued downtown-Louisville revitalization, as well as some of the other expansion projects noted above; a steady or modestly rising level of consumer spending; and the likelihood of seasonal gains in employment. Among the negative considerations are the shaky financial status of International Harvester, the lack of private sector jobs for workers affected by government sector cutbacks, and the cumulative effects of continued high interest rates and recession. Since the most pervasive problems are in interest-sensitive industries, substantial relief on the local level depends upon national economic improvements that result in falling interest rates. Consequently it is difficult to foresee more than modest gains in the next several months.

Table 2

LOUISVILLE AREA EMPLOYMENT AND UNEMPLOYMENT, 1979-1982*

	Louisville Metropolitan Area		*Clark and Floyd Counties*	
Annual Averages	*Nonfarm Employment*	*Unemployment rate (%)*	*Nonfarm Employment*	*Unemployment rate (%)*
1979	402,700	5.2	46,800	6.1
1980	391,700	7.9	47,400	8.1
1981	383,400	9.0	47,800	10.2
Quarterly Averages				
1981:				
Q1	385,300	7.6	47,400	8.3
Q2	388,300	9.0	48,500	10.1
Q3	383,500	8.6	48,800	9.1
Q4	376,700	10.8	46,600	13.1
1982:				
Q1	376,000	10.9	43,400	14.2
Apr.	369,600	13.4	44,300	14.8

*The employment data refer to establishments located within the area cited and include workers on strike; the unemployment data refer to residents of the area cited and are seasonally adjusted.
#Includes Floyd and Clark counties in Indiana, and Jefferson, Oldham, and Bullitt counties in Kentucky.
SOURCES: Indiana Employment Security Division; Kentucky Department for Human Resources.

TERRE HAUTE

MARVIN FISCHBAUM

Professor of Economics, Indiana State University

Six months ago the Terre Haute economy appeared to be falling apart. Widespread layoffs and announcements of plant and store closings dominated local news. The region remains depressed, but at least one now can see some hopeful signs.

Perhaps the most positive development is the increased recognition by the community of the need to attract new industry and new jobs, and a concomitant willingness to pitch in together to achieve that end. In Grow Terre Haute Day, a cooperative effort this year by leaders from business, labor, education, and government produced a professional exposition that effectively showcased area assets.

The Terre Haute Airport Authority exhibited considerable initiative in uncovering the possibility of acquiring a statewide FMA facility and then in assembling the winning proposal within a very tight time constraint. Broad support for the Authority's action was evidenced when requisite signatures on petitions authorizing the issuance of bonds were easily gathered, while counter-petitions circulated by Indianapolis based air traffic controllers went nowhere. One can argue that the Authority bid too low, and that by constructing a million dollar facility and renting it to the FAA at one dollar per year it is engaging in reverse revenue sharing, but the Authority's actions advertise a new aggressive spirit in the area and a determination to actively pursue opportunities.

The best news during the first half of 1982 might well have been a halt, or at least a protracted pause in the parade of closings that put such a pall on the local outlook in the latter part of 1981. The city also won a few competitions. Most notably, IMC will consolidate its research operations at Terre Haute, will transfer professional staff from Northbrook Illinois, and will build a new laboratory. CBS closed a sound recordings production line in California and intends to move much of the equipment to Terre Haute. A new enterprise, Midland Industrial Alcohol, intends to update and modify an old distillery, not utilized for many years, so that it can make fuel grade alcohol. All of this, however, does not change the basic situation; Terre Haute, despite a diversified industrial base, finds itself with a number of industries experiencing difficulties.

When unemployment statistics are about to be announced, television networks do not send their news crews to Terre Haute. That dubious distinction is awarded to Anderson, Kokomo, or Gary. Among the eleven metropolitan areas in Indiana, the Terre Haute unemployment rate falls in the middle of the pack. Establishment employment figures, although less closely watched, may provide a more accurate picture of the changing economic climate in a locality; and the trend in Terre Haute is discouraging. Jobs in the four county area fell from 69,800 in October 1979 to 57,300 in April of 1982. The table below attempts to place local employment trends within a statewide perspective. Average employment in a given calendar quarter is divided by the average employment level in the corresponding quarter of the previous year. The resultant growth rate for a county is then ranked among the ninety-two counties in Indiana. If a county ranked 1, it had the highest rate of employment growth; a county ranked 92 had the most rapid rate of shrinkage.

The somewhat below average performance of area counties in relatively prosperous 1979, and the strong performance in the recessionary second and third quarters of 1980, constitute a normal pattern for this metropolitan area for at least the past twenty years. Cyclical employment adjustments tended to be of lesser amplitude than elsewhere in the state, and tended to lag both the state and the nation. But something changed in 1981. Rather than showing relative strength in a recession, the rate of employment loss in the region became extreme, and any improvement in 1982 has been slight.

From November 1979 to April 1982 employment in construction dropped from 4,600 to 2,500, primarily because of the completion of major industrial projects, but also because building permits for residential units dropped 55 percent between 1980 and 1981. A further decline in construction activity is likely, as the largest permits issued so far in 1982 involve the updating of a local hospital, the construction of a new convalescent center, and the building, with public funds, of sixty units of residential housing in a scatter site development.

Local employers in troubled industries are not likely to experience quick turnarounds. CBS Records may have seen the end of its long slide, but competition from blank tape and from computer games remains intense. There may be some glimmers of hope in agriculture, especially for those raising livestock, but implement makers, including J.I. Case, are not about to be swamped with orders. Makers of bottles for beverages, such as Midland Glass, continue to be beset by competition from plastic bottles, and aluminum cans, and continue to face declining teenage population. Fashions change, and "gourmet" style enamel cookware, made here by GHC, appears on the way out, while "high tech" professional style cookware is the latest rage. Anaconda Aluminum, dependent on orders from the automotive industry, might see an upturn, but for others the recovery will be slow.

The Terre Haute economic base experienced serious erosion. Community leadership is stronger, and community cooperation more pervasive than in the past, but recovery will be slow.

Table I

INDIANA COUNTY RANK OF EMPLOYMENT GROWTH RATE BY CALENDAR QUARTER

	1979				*1980*				*1981*				*1982*
County	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Clay	79	62	64	67	15	16	15	28	78	91	88	86	89
Sullivan	54	53	52	51	35	35	29	55	79	88	87	87	57
Vermillion	28	34	32	31	54	50	47	66	81	89	88	89	49
Vigo	57	54	54	54	30	24	23	40	80	90	90	88	87

SOURCE: Indiana Information Retrieval System.

Indiana's Business

PERSONAL INCOME

Indiana's personal income rose, without adjustment for inflation, by 6.32 percent from the fourth quarter of 1980 to the fourth quarter of 1981. Only Michigan at 6.30 percent, Oregon at 6.22 percent and West Virginia at 5.90 percent ranked behind the Hoosier state. The national increase was 10.4 percent with increases of 15 percent or more in North Dakota, Oklahoma and Texas.

The recent poor performance of this state continues a much longer pattern. From the last quarter of 1978 to the end of 1981, Indiana's personal income grew by 24.13 percent, the second worst record of all states; only Iowa had a slower rate of growth at 22.20 percent. During the same period the national rate of growth was over 38 percent.

From 1969 to the most recent quarter for which data are available from the U.S. Bureau of Economic Analysis, we find that the nation's personal income expanded by 212 percent; Indiana, at 195 percent, had just three states (New York, Illinois, and Ohio) trailing behind.

The cumulative dollar value of Indiana's slower growth is staggering. Indiana's share of personal income has declined from 2.52 percent at the start of 1969 to 2.16 percent at the close of 1981. Although this decline of 0.36 in percentage points may appear small, it means that personal income in Indiana was nearly $9 billion less in the fourth quarter of 1981 than it would have been if we had retained our 1969 share of the nation's personal income. In other words, our state's personal income would have been $62.8 billion instead of the reported $53.8 billion in the final quarter of 1981.

The loss of our relative position left Indiana with 15 percent less personal income in 1981 than we would have had if our 1969 position had been sustained. Each Indiana business, government, public, and voluntary organization had a share of that shortfall.

Morton J. Marcus

INDIANA INDUSTRIAL ELECTRICITY SALES
(Seasonally adjusted in millions of kilowatt hours)

	April 1982	*March 1982*	*April 1981*	*Percent Change From*	
				One Month Ago	*One Year Ago*
Anderson	27.0	21.5	28.9	25.6	-6.6
Bedford	12.3	10.9	16.2	12.8	-24.1
Bloomington	3.9	4.6	2.8	-15.2	39.3
Columbus	17.8	17.3	21.1	2.9	-15.6
Connersville	9.1	8.2	9.1	11.0	0.0
Crawfordsville	11.3	11.0	10.4	2.7	8.7
East Chicago	21.6	23.2	28.4	-6.9	-23.9
Elkhart	22.8	21.7	21.6	5.1	5.6
Evansville	47.6	47.4	41.1	0.4	15.8
Fort Wayne	32.2	42.5	47.0	1.6	-8.1
Frankfort	8.0	8.1	8.0	-1.2	0.0
Gary	144.3	184.5	188.2	-21.8	-23.3
Goshen	9.1	8.6	8.8	5.8	3.4
Hammond	55.0	54.5	54.1	0.9	1.7
Huntingon	4.9	4.5	5.0	8.9	-2.0
Indianapolis	344.9	338.5	339.8	1.9	1.5
Jeffersonville	5.7	5.6	6.4	1.8	-10.9
Kokomo	66.2	57.3	78.3	15.5	-15.5
Lafayette	43.9	36.2	39.0	21.3	12.6
LaPorte	14.4	14.7	14.9	-2.0	-3.4
Logansport	7.7	7.0	9.7	10.0	-20.6
Madison	2.6	2.3	2.3	13.0	13.0
Marion	30.5	29.2	29.9	4.5	2.0
Michigan City	43.1	43.3	45.9	-0.5	-6.1
Mishawaka	3.0	3.0	2.9	0.0	3.4
Muncie	12.9	13.4	18.9	-3.7	-31.7
New Albany	4.8	4.4	4.6	9.1	4.3
New Castle	8.7	7.7	8.7	13.0	0.0
Peru	5.2	4.6	4.8	13.0	8.3
Richmond	22.6	25.3	22.6	-10.7	0.0
Seymour	2.3	2.5	2.4	-8.0	-4.2
South Bend	26.2	26.0	25.4	0.8	3.1
Terre Haute	31.0	27.5	32.8	12.7	-5.5
Valparaiso	8.2	8.4	8.5	-2.4	-3.5
Vincennes	3.2	2.9	2.7	10.3	18.5
Wabash	7.1	5.6	7.2	26.8	-1.4
Indiana	**1,767.1**	**1,754.4**	**1,883.3**	**0.7**	**-6.2**

SOURCES: Data provided monthly by public and municipal electric companies.

UNITED STATES – INDIANA BUSINESS INDICATORS*

(Seasonally adjusted indexes unless otherwise noted; base period: 1967 = 100)

		United States				*Indiana*		
		Latest Month	*Previous Month*	*One Year Ago*		*Latest Month*	*Previous Month*	*One Year Ago*
EMPLOYMENT								
Nonagricultural employment	Apr.	137.6	137.9	139.0	Apr.	114.8	115.6	120.0
Manufacturing employment	Apr.	99.0	99.4	104.5	Apr.	84.7	85.5	92.6
Average weekly hours (no.)+	Apr.	38.7	39.1	39.7	Apr.	39.2	39.1	40.1
Average weekly earnings ($)+	Apr.	325.08	326.49	312.84	Apr.	382.2	380.8	373.3
Nonmanufacturing employment	Apr.	153.7	154.1	153.1	Apr.	134.5	135.7	137.7
Unemployment rate (PCT)	Apr.	9.4	9.0	7.3	Apr.	12.6	12.5	10.0
Unemployment-married males (%)	Apr.	6.0	5.5	3.8	–	–	–	–
Continued unemployment claims	–	–	–	–	Apr.	460.8	422.3	412.8
PRODUCTION								
Bituminous coal production	Mar.	168.8	169.0	164.1	–	–	–	–
Industrial electricity production	Jan.	139.4	142.7	153.1	–	–	–	–
Industrial electricity sales	–	–	–	–	Apr.	154.6	153.4	164.7
Manufacturing production	Apr.	139.4	139.9	152.0	Apr.	140.5	137.0	151.2
Raw steel production	Apr.	51.9	70.1	99.3	Apr.	97.5	113.2	134.8
CONSTRUCTION								
Construction activity-total	Mar.	298.5	300.8	323.1	Apr.	180.2	171.2	231.9
Residential housing starts	Apr.	68.6	73.2	101.3	Apr.	58.8	37.4	76.2
Residential expenditures	Mar.	299.4	300.2	379.2	Apr.	176.2	180.0	319.2
Nonresidential expenditures	Mar.	298.0	301.1	295.7	Apr.	182.3	184.3	226.6
Public expenditures	Mar.	202.7	201.1	236.3	–	–	–	–
Public works and utilities	--	–	–	–	Apr.	174.1	118.1	148.0
OTHER INDICATORS								
Personal income per capita ($)[1]	Mar.	10,897.5	10,864.9	10,207.5	81:IV	9,839.0	9,762.0	9,219.0
Passenger car sales (thousands)+	Apr.	669.0	777.0	751.0	Mar.	14.8	10.7	20.6
Year to date (thousands)	Apr.	2,711.0	2,042.0	3,126.0	Mar.	34.0	19.2	49.9

*Current indicators are preliminary and subject to revision

+Not seasonally adjusted

SOURCES: Data on Indiana construction from McGraw-Hill Information Systems Company; Indiana passenger car registration from R.L. Polk & Co.; indexes of raw steel production for the United States and Indiana courtesy of American Iron and Steel Institute, Washington, D.C.; all other data from U.S. and Indiana government agencies and Division of Research, School of Business, Indiana University.

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The Economic Importance of Marinas, Launching Facilities, and Other Boating-Related Activities to the Michigan City Economy

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INTRODUCTION

The loss of firms from the industrialized north to the south and west is a well known fact. Communities in Indiana, like communities in other parts of the nation that are losing firms, have increased their efforts to attract new firms and to develop those activities in which they have a comparative advantage. Economic planners and local leaders frequently want to know the economic impact of a particular firm locating in their locale or of using public funds to encourage the development of some type of economic activity in order to exploit a comparative advantage that the community enjoys. This article illustrates the use of the export-base model in estimating the economic importance of a particular type of activity to an Indiana community. More specifically, this study analyzes the economic impact of marinas, launching facilities and other boating-related activities on the Michigan City economy.

THE MODEL

The export-base model of regional economic analysis used in this study emphasizes the central role of exports (sales to those outside of the region) in that region's short run and long run prosperity. The model generates three basic tenets.

First, the short run prosperity of a small region is largely determined by changes in demand for its exports. One only has to note the news reports about the double digit unemployment rates in Michigan, Ohio, and Indiana to see how the decline in the demand for automobiles across the nation has adversely affected the short run economic health of these communities. However, because regional economies have always attempted to exploit activities in which they have a comparative advantage, they have little ability to make short run adjustments in response to changes in demand for the types of goods they produce. If demand increases for the specialized product the region produces, the region's resources are more intensively utilized and prosperity ensues. But if demand declines drastically, those same specialized resources have few, if any, other opportunities. They simply remain unemployed or underutilized in the short run. The short run stability of a region and the prosperity of its specialized resources are thus largely determined by short run fluctuation in demand for the region's export products.

The second major tenet of the export-base model is that over the longer term the prosperity of a small region depends in part on the comparative advantages the region possesses, changes in these comparative advantages over time, and new comparative advantages the region develops. Prosperity also depends to an important degree on growth in the demand by those outside the region for products that the region produces because of these comparative advantages. Historically, successful regions have exploited new comparative advantages as either the demand for older ones has died out or older comparative advantages disappeared. Unsuccessful regions have generally been unable to develop new comparative advantages for which there was a demand.

The third major tenet of the export-base model is that a change in the export activity of a small region will have a multiplier effect on the total level of economic activity within the region. The multiplier is a number greater than one that indicates the total impact on regional income per dollar change in regional ex-

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In this issue ▪ ▪ ▪

Economic impact statements are always in fashion. The economic value of recreational resources is the subject of a study of three I.U. faculty members from South Bend. They offer an estimate of the economic benefits derived by Michigan City from its recreational harbor facilities.

The resources of Indiana include its extensive forest areas. Robert Menke offers some thoughts on the value of those resources within the context of the state's economic development effort.

New data help us understand our environment. Recent statistics indicate that Indiana has climbed into the number one position in the production of steel. Revised personal income data suggest slower growth in our state's economy than previously reported.

Morton J. Marcus,
Editor

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ports. A multiplier of 2.5, for instance, means that a $1 million increase in exports from the region ultimately increases total regional income by $2.5 million. The following example illustrates how the multiplier comes about. Suppose an exporter in the regional economy receives a $1 million increase in orders and the exporter produces the additional export goods by having his production workers work overtime. The $1 million of expenditures goes partly to the exporter, as profits, partly to the production workers as overtime pay, and partly to purchase materials needed for producing the export product. Let's assume that these materials are entirely produced in the region. The region then has $1 million more income. The exporter and his workers, as well as owners and workers who sell the exporter materials, spend some part of their additional earnings in the region. Suppose this amount is $700,000. This $700,000 becomes income for shopkeepers and their employees, restaurateurs and waitresses, grocers and their help, appliance dealers and their sales people, car dealers and their employees, and so on. The $1 million of regional income has now grown to $1.7 million, but the income generation process does not stop there. The expenditure of $700,000 creates $700,000 of additional income for the people receiving this additional income and these people will also start spending part of it on consumer goods and services such as TV sets, clothing, entertainment, and furniture. If they spend $490,000 of this income, regional income will rise to $2.2 million. We could go on round after round of income and spending and show that the $1 million of new export income would, under the condition that $0.70 of each new dollar is spent in the region, generate a total income increase of $3.3 million. The multiplier in this case is 3.3.

AN ALGEBRAIC FORMULATION OF THE EXPORT-BASE MODEL

Our discussion of the export-base model can be summarized algebraically by stating that regional income is the sum of two components: first, export income, which is determined by forces outside the region; and second, local production income, which is a function of the level of regional income. If regional income is Y, export production income is E, and local consumption goods production income is L, regional income is given as:

$$Y = E + L \quad \text{(Equation 1)}$$

Equation 1 states that regional income, Y, is equal to the sum of export production income, E, and local consumption goods production income, L. E is determined by forces outside the region, such as national income, tastes outside of the region and so on.

$$L = p(Y) \quad \text{(Equation 2)}$$

Equation 2 states that local consumption goods income, L, is the proportion of regional income spent within the region, p, times total regional income, Y.

$$Y = E + p(Y) \quad \text{(Equation 3)}$$

Equation 3 is obtained by substituting p(Y) for L in equation 1.

$$Y = E \times (1/1\text{-}p) \quad \text{(Equation 4)}$$

Equation 4 is equation 3 solved for Y. The (1/1-p) term in equation 4 is the multiplier. Equation 4 indicates that, over the long run, regional income is determined by two factors: the level of export income, E, and the size of the multiplier, (1/1-p). Hence, to estimate the impact of a type of economic activity on the regional economy—boating-related activities on the Michigan City economy in the case of this study—we require data on the change in E (export activity) and an estimate of the multiplier. We now turn our attention to the methods used to obtain estimates of E and the multiplier.

DATA COLLECTION ON BOATING-RELATED EXPENDITURES

The primary method of collecting data on boating-related expenditures involved surveying the users of the private and public boating facilities in the Michigan City area. A questionnaire was developed and mailed to the users of the marinas and to participants in the Coho Club and Shriners Salmon Derby. The responses from these groups were excellent. We also attempted to hand out questionnaires to users of the public launching facilities, as well as mailing questionnaires to the users of these facilities. Although the level of response from the users of the public launching facilities was sufficiently high to allow us to include this information in the study, the response rate was considerably below the rates obtained from the marinas.

The survey was structured in such a manner that data were collected relating to where the respondent lived, type of craft, size of craft, number of trips the respondent made to Michigan City for boating-related activities, an estimate of the annual expenditure for sixteen different expenditure categories, the proportion of the respondent's time that was spent in eight boating-related activities, and the respondent's income level.

Another boating-related activity is an annual boat show which attracted over 7,000 visitors in 1980. A questionnaire was developed which obtained information on on the residence of the respondent, estimates of expenditures in Michigan City for six expenditure categories, whether they purchased a boat or boating equipment in Michigan City because of the boat show, whether they were planning to purchase a boat or boating equipment in Michigan City because of the boat show, the amount they spent or planned on spending in Michigan City on boats and boating equipment due to the boat show, and their income level. The questionnaires were handed out at the boat show, and more than 500 questionnaires were returned.

From information obtained through the surveys described above, we were able to estimate the impact of the entire population of boaters using Michigan City boating facilities. The estimates were arrived at by determining the total number of boaters in each survey group and classifying each boater as a Michigan City resident or nonresident. The next step entailed applying the average expenditure estimates obtained from the surveys to the estimated number of boaters from each population.

By talking with people who were knowledgeable about boating in Michigan City, we were able to identify forty-four families who have moved into the Michigan City area in order to take advantage of the boating facilities. It was assumed that 25 percent of these families drew their income from outside of Michigan City while the remaining thirty-three families took the place of income earners who would have come whether boating facilities were available or not. It was further assumed that the average income level of the eleven families was $40,000 per year. We were also able to identify twenty-nine families who work outside of Michigan City, but who spend many weekends and virtually the entire summer in Michigan City for boating activities. We assume that these families spend 190 days in Michigan City (30 two-day weekends, 10 three-day weekends, and 100 days of summer vacation) at an average cost of $75 per day. The $75 may seem high, but these are households who must maintain and pay for their housing and their boat for 365 days of the year. This gives us a total direct expenditure in the Michigan City economy of $413,250.

In addition, we have received reliable information that several years ago a businessman located his residence and his business, a specialty bakery plant, in Michigan City so that he and his family could take advantage of the area's boating activities. Although the plant has changed hands, the facility is still employing sixty workers at an average salary of approximately $15,000 apiece for a total payroll of $900,000.

ESTIMATES OF THE MULTIPLIER

The multiplier, as noted above, is an estimate of the total income change, direct and indirect, per dollar of additional boating-related expenditure. For example, a multiplier of 2.5 would indicate that each additional dollar of boating-related expenditure creates total income of $2.50. Consequently, each additional dollar of boating-related expenditures would increase income in sectors not directly related to boating by $1.50.

Clearly, then, we require an estimate of the multiplier so that we can translate direct expenditure changes into total impacts. Ideally, we would construct an input-output model for the Michigan City economy showing the input changes, direct and indirect, resulting from various boating-related outputs. From this model, the necessary multipliers could then be estimated. Such an undertaking is extremely expensive and time-consuming and therefore beyond what is possible in this study. As a second best procedure, we rely on multipliers developed from an input-output model for Door County, Wisconsin. These multipliers have been used in several studies similar in purpose to that undertaken here.[1] The Door County Multipliers are shown in Table 1.

The most noticeable aspect of the Door County multipliers is that they differ substantially from sector to sector. For example, a $1 expenditure on Finance and Insurance has almost twice the total impact of a dollar spent on food stores. To a large extent, the difference in multipliers reflects two factors: 1) the amount of local household income (wages, profits, interest and rent) generated per dollar of expenditure; and 2) the amount of local purchases generated per dollar of expenditure. These two factors vary widely from industry to industry. For example, in the case of the food stores, most of the goods sold are very likely purchased outside the local area. Thus each dollar of expenditure generates a relatively small amount of local purchases. In addition, if many of the local food stores are owned by chains, the profits from these stores will not remain in the local area. Consequently, in the case of food stores, the amount left locally to be re-spent is relatively small and therefore the multiplier effect is small. In contrast, banks, especially those in smaller communities, are usually locally owned and generally purchase funds (e.g., deposits) from local households. Thus, for each dollar spent on interest, a relatively large portion of that dollar remains in the local economy and hence ultimately leads to a much more significant multiplier effect.

Would the multiplier effect in the Michigan City economy be similar to those found in Table 1? Let us briefly mention some calculations we made for LaPorte County, Indiana that indicate that the Door County multipliers are, at least on the average, reasonably representative of the multiplier effects Michigan City would experience. Using personal income data from the Indiana Information Retrieval

Table 1

TABLE OF ECONOMIC MULTIPLIERS BY INDUSTRY SECTOR

Expenditure Category	*Door County Multiplier*	*Expenditure Category*	*Door County Multiplier*
Marine Gasoline	1.8870	Hotel and Motel	2.3699
Marine Insurance	2.9453	Grocery Stores	1.4743
Water Transportation	2.3287	Eat and Drink Places	2.2705
Retail Trade	1.7250	Laundry and Cleaning	2.9453
State and Local Government	2.4704	Auto Repair and Services	1.8870

System (INDIRS), we calculated that for the period 1975 to 1978 each dollar of export income generated between 3.2 and 3.6 dollars of total income. The average multiplier from the Door County data is about 1.8 or 1.9. For the Door County multipliers to be consistent with the multipliers calculated for LaPorte County, each dollar of boating-related expenditure would have to generate for Michigan City residents at least fifty cents of labor income, profits, interest or rents. A relationship between expenditures and income of this size is not unreasonable when we consider that most of the boating-related services are locally owned and largely financed by local banks. Therefore, we are confident that, on the average, the Door County multipliers are reasonably close to what would be obtained if the resources were available to conduct an input-output study for the Michigan City economy.

ESTIMATED ECONOMIC IMPACTS OF BOATING-RELATED ACTIVITIES

The estimated direct expenditures can be combined with the multipliers to obtain the total estimated economic impact of boating-related activities on the Michigan City economy. The survey data were used to obtain two estimates; expenditures by residents of Michigan City and expenditures by people who reside outside of the Michigan City area. The rationale for obtaining separate estimates for these two groups is that there is no multiplier effect for the Michigan City residents whereas the expenditures by the nonresidents can be thought of as export-base income which will have a multiplier effect.

An example might help to clarify why residents and nonresidents are treated differently in the case of the multiplier. Let us suppose that Jones lives in Michigan City and that Smith lives in Chicago. Both Jones and Smith boat in Michigan City. The possibility cannot be ruled out that Jones' expenditures on boating may substitute for other expenditures he would have made in the Michigan City economy. If such substitution takes place, and if Jones spends $500 on boating, then boating related expenditures, as well as the income of all those who benefit from such spending, rise but other Michigan City recipients of Jones' spending now have less. In such a case, Jones' spending causes boating-related expenditures to increase, but total income in the Michigan City economy remains unchanged. With income unchanged no multiplier effects take hold. On the other hand, in the case of Smith, his boating-related expenditures in Michigan City do not substitute for other expenditures he might make there. In effect, Smith brings new income to the Michigan City economy which when spent puts the multiplier process into motion.

The estimated direct expenditures by households relocating to Michigan City because of boating facilities were multiplied by an export multiplier of 1.5 to obtain the total income impact on the Michigan City economy. The payroll of the bakery business that located in Michigan City because of the boating facilities was multiplied by an export multiplier of 3.0 in order to arrive at its total impact on the Michigan City economy. An export multiplier of 3.0 was used since the product is distributed nationally and would therefore have a bigger impact on the local economy than if it was distributed locally.

Table 2 summarizes the estimated economic impacts of boating and boating-related activities on the Michigan City economy.

Table 2

SUMMARY OF THE ESTIMATED ANNUAL ECONOMIC IMPACTS TO THE MICHIGAN CITY ECONOMY FROM BOATING AND BOATING-RELATED ACTIVITIES (1980 DOLLARS)

Activity	*Annual Income Impact*
Total income change due to boaters using Michigan City facilities.	$9,326,524
Total income change due to the boat show.	4,064,692
Total income change due to households relocating to Michigan City because of boating facilities.	1,279,875
Total income change due to export businesses locating in Michigan City because of boating facilities.	2,700,000
Total income impact.	$17,371,091

SUMMARY AND CONCLUSIONS

As a result of our analysis of the boating industry in the Michigan City area we estimate that approximately $17.5 million is generated each year in the Michigan City area economy that would not exist if the boating and boating-related facilities were not in Michigan City. Seventeen and one half million dollars may not seem like a lot of money, but for a relatively small regional economy it is an important contributor. In order to have the same impact, an industry with a multiplier of 1.5 would have to create approximately 1,000 new $12,000 jobs or an industry with a multiplier of 2.0 would have to create 500 new $17,500 jobs. Most cities would be very pleased to create either of these situations.

Few Indiana cities have access to a major lakeshore as does Michigan City, but many Indiana cities do have unique scenic, recreational, or other resources that are capable of and do contribute to their local economies. Our study of the boating industry has been very useful in demonstrating that the time, effort and resources used to develop the lakefront have benefited the entire local economy and the great majority of Michigan City residents. In similar fashion the export-base model could be very useful in combatting skepticism toward other worthwhile developmental projects.

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[1] Robert W. Schott, "The Impact of Great Lakes Recreational Boating on the Economy of Michigan" (Master of Science thesis, Michigan State University, 1975), p. 89.

Forestry's Claim to the Future

ROBERT H. MENKE

President, Styline Corporation/Ferdinand Furniture Company

Indiana, like most states, needs to create more industrial jobs. It appears certain that in the future many plants which supply automotive parts will be scaled down as the automobile industry concentrates on making smaller, more fuel-efficient cars. Indiana must continue to try to attract new industry, but, at the same time, it should encourage the expansion of the basic industries that it already has.

Wood manufacturing in Indiana, not including the housing industry, employs some forty to fifty thousand people. Because it is made up of many scattered units, it plugs along unnoticed, except perhaps in small communities on payday. It is an old industry—as old as agriculture. Even the bodies and wheels of early horseless carriages were made of hickory and oak. At the turn of the century Indiana was the largest producer of hardwood lumber in the world. For a time after World War I factories in Indiana produced a larger tonnage of furniture than was manufactured anywhere else in the United States—furniture not always of the best quality but made to last with solid wood tops, thick veneer ends and resawn drawer bottoms, all fastened together with animal glues and finished in a cloud of thick golden varnish. A segment of this industry survives and is flourishing today.

Economists predict that American consumers will increase the percentage of their income spent on housing and furniture in the future as the cost of transportation rises and as the benefits of new forms of communication make new homes more attractive. There is a good chance that wood-using industries in Indiana—factory-made housing, conventional building business, manufacture of cabinets and furniture—can greatly expand their employment in the years ahead. If this is to happen, structural lumber, particle board, and fiberboard must be made available at low cost. As inflation continues to increase freight rates, building contractors will find it impractical to buy these heavy, bulky products from distant suppliers. Even today, freight costs total one third of the $16,000 invoice for a carload of western particle board shipped to Indiana.

HARDWOOD FORESTRY

The recent approval of changed standards for the use of yellow poplar as structural lumber opens a way for new hardwood lumbering operations. Higher shipping rates on southern and west coast softwood lumber, together with long-term predictions of softwood shortages, will encourage the cultivation of poplar. (Experts are saying shortfalls of timber will occur worldwide after the year 2000.) Yellow poplar is self-seeding in woods openings, grows straight, is disease-free, and matures in half the time it takes to grow other commercially-valuable hardwoods (80-100 years for white and red oak). As mills cut two-by-fours, better grades of poplar could be made available at lower cost for mouldings and dimensioned wood parts. Also, increased lumbering will provide wood waste and roundwood for fiberboard plants, pulp mills, wood chemical facilities, and even firewood.

Hardwood forestry suffers from a lack of markets for low-grade material. Of 3.8 million acres of wooded land in Indiana, less than 15 percent is quality timber. Most wood lots are understocked, crowded with defective trees or unmarketable species—puckerbrush estates! Even at that, Indiana does a better job of growing hardwoods than other states simply because fifteen local veneer mills bid for select logs and because the Forestry Division of the Indiana Department of Natural Resources, working with private agencies, encourages growth of veneer logs among those tree farmers who have established hardwood stands. Ninety percent of Indiana's woodlands are owned by private individuals who are interested foremost in recreational use of their land. Better markets for low-grade trees and quicker regeneration of more valuable hardwood inventory would do much to revitalize concepts of multipurpose forestry.

Even though per capita consumption of hardwood lumber has been decreasing for many years, future supplies of large logs will not be adequate for a growing world population and will expand the demand for wood. Pressure will increase to clear marginal land for production of food crops. Most hardwoods in the U.S. grow in the South, but as demand for softwood increases, most of these scrub areas will become pine plantations. A program to encourage yellow poplar regeneration in Indiana will eventually cause more owners to produce a variety of hardwoods on suitable sites which will result in, not only the production of more fiber, but more high-quality timber as well. The U.S. will someday become a net exporter of wood rather than a net importer. (Total exports of lumber are 2.1 billion *board* feet annually; imports, 11.5 bbf.)

EMPLOYMENT AND INCENTIVES IN FORESTRY

Indiana is surrounded by states with extensive resources of timberland—Michigan with 8.8 million acres; Wisconsin, 14.5 million acres; Kentucky, 11.9 million acres; Ohio, 6.4 million acres; Illinois, 3.7 million acres. Lake Michigan and the Ohio River provide a natural corridor for shipping hardwood logs and roundwood to be used for pulp and chemicals. Processing plants located along Lake Michigan or on the Ohio River could draw on these resources as well as on local supplies of hardwood. Because of Indiana's central location, its established forestry program and its diversified wood industry, the state could easily become an expanded center for wood processing. A complex such as this, based on sustained yields of renewable resources, offers more hope for future employment than expansion based on scarce raw materials or on the vagaries of defense spending. Harnessing the productive capacity of tens of thousands of small wood lots would provide benefits for many small owners and eliminate the need for forestry incentive payments.

The place for incentives is in the industrial area. The classification law passed in 1921, which frees land dedicated to tree-farming from burdensome property taxes, plus the liberalized capital gains tax treatment of forest income, furnishes sufficient inducement for tree farmers—providing, of course, there is adequate income from sales of low-grade trees. What would ultimately help the people of Indiana would be a system of broad incentives that would serve to attract and expand plants that utilize wood fiber. The Hoosier state could make unlimited bonding available for construction of wood panel, pulp, wood chemical, and wood energy facilities. Moratoriums on property taxes would encourage these companies to make long-term investments for the benefit of related industrial employment. Even state income taxes could be reduced or postponed on profits from those kinds of investments which will cause people to plant trees and contract for timber stand improvement harvests. Agricultural Stabilization and Conservation Service subsidies for deadening undesirable trees do waste resources and contaminate the environment with noxious chemicals, but are necessary until there is a decided shift in forestry economics.

FORESTRY AND THE ENVIRONMENT

The greatest payoff in the expanded use of low-grade wood material would be in related environmental benefits. Reforestation is sorely needed in the world today. Even community forestry is in disarray. Indiana is losing 100 million tons of top soil each year, much of it from land which should be reforested. The U.S. loses 6.4 *billion* tons annually. Thousands of acres of bottom lands are cleared each year increasing the hazard of flooding. Trees are needed to generate oxygen and as a carbon sink to absorb increased air-pollution. More woods are needed for wildlife, for recreation, and for beauty of landscape. What is imminently exciting about the expansion of basic wood-using industries is their potential impact on multipurpose forestry. The creation of jobs is important, but more important is the improvement of our living space and the protection of our environment.

Indiana forests will be a greater public asset in the future if we plan now to provide the incentives needed to attract and expand industries which use low-grade wood materials. Thousands of owners of small woodlands will be encouraged to practice tree-farming if primary wood industries assist in the management of scattered woodlands. Forestry's claim to the future involves environmental needs which will be best served by programs which place higher economic value on all trees.

Indiana's Business

NEW NUMERICAL VIEWS

INDIANA: NUMBER 1 IN STEEL

No one seems to have noticed, but Indiana has moved up to become the leading steel producing state in the nation. Attention has focused on the decline in production and employment. But as we have learned in many instances, hard times fall with considerably different impacts across the nation. In the case of steel, Indiana has been a relative winner, less severely affected than other states.

Indiana's share of U.S. raw steel production has climbed from less than 16 percent in 1974 to more than 21 percent thus far this year. It remains to be seen if this result for the first five months of 1982 holds for the year; if it does Indiana will have another first for its cap. In 1978 Indiana climbed past Ohio into the number two position in the nation and, in this year of deep recession, the Hoosier state has passed Pennsylvania, to claim the number one position in production of raw steel (see Figure 1).

Indiana's steel output has performed better than the nation in six of the past eight years. During five of those eight years, steel output in the state and nation has fallen, but the fall in Indiana averaged 11.4 percent per year compared to the nation's 14.1 percent average decline. In the three years of growing steel output, Indiana averaged 13.2 percent in growth, while the nation lagged at an average of 8.8 percent growth (see Table 1).

No one pretends that the steel industry is in good health, but the malady is less intense in Indiana where the nation's more modern facilities are located.

Figure 1

SHARE OF U.S. RAW STEEL PRODUCTION

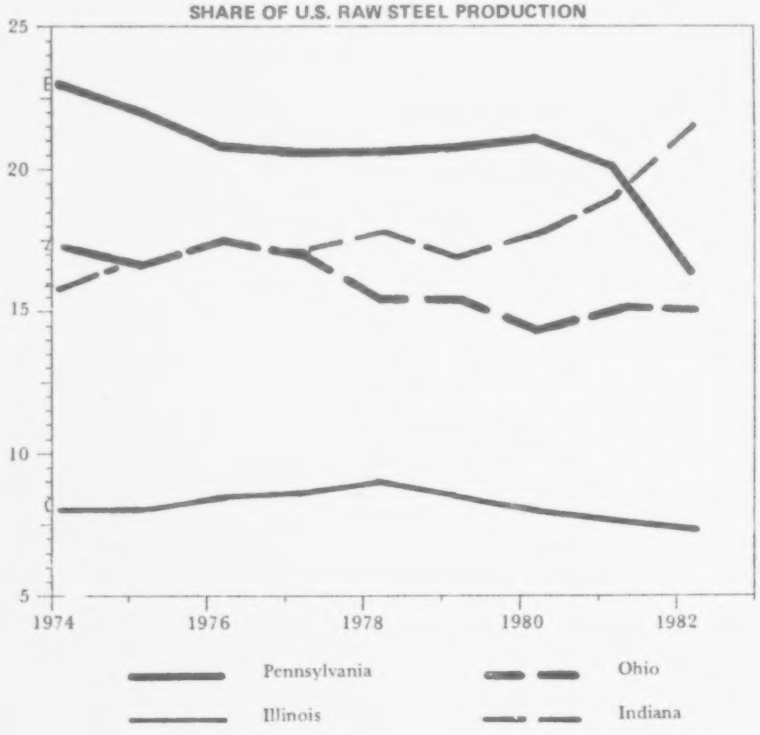


Table 1

RAW STEEL PRODUCTION

	Indiana			*United States*	
	Tons (Millions)	*Share of U.S.*	*Percent Change*	*Tons (Millions)*	*Percent Change*
1974	23.1	15.9		145.5	
1975	19.8	17.0	−14.2	116.8	−19.7
1976	22.2	17.3	+12.0	128.2	+9.8
1977	21.5	17.2	−3.2	124.7	−2.7
1978	24.4	17.8	+13.4	136.7	+9.6
1979	22.9	16.9	−5.9	135.9	−0.6
1980	19.8	17.7	−13.5	112.1	−17.5
1981	22.7	18.9	+14.3	119.9	+7.0
1982*	18.0	21.5	−20.4	83.8	−30.1

SOURCE: American Iron and Steel Institute.

*Division of Research projection based on 1982 data January to May and 1974 to 1981 average performance for first five months of each year.

REVISED PERSONAL INCOME DATA

The budgetary process of the State of Indiana utilizes forecasts of Indiana's personal income. The Econometric Model of Indiana (EMI) from this office produces forecasts of Indiana's personal income.

Both depend on estimates of personal income generated by the U.S. Bureau of Economic Analysis (BEA). That is the only current relationship between the state's budgetary process and EMI. Both have been thrown a curve recently by the extensive revisions in the personal income estimates made by BEA (see Table 2).

For 1981, BEA's quarterly revisions ranged from –1.8 percent to –2.8 percent. That may not read as a big change, but in a state with personal income running at more than $50 billion per year, a one percent revision is $500 million. The Budget Agency's revenue anticipations were based on the latest and best available data. When the estimates of the past were revised downward, the revenue projections proved to be too high.

The problems are statistical but also political. They relate to the very nature of the data collection and reporting processes in this nation. State and local data are based on extensive but poorly supported systems. Much of the information available for states and localities is derived by complex estimating techniques which trail behind the more widely supported national programs. When budget slashing begins in Washington, it has direct impact at the state and local level because no subnational government can afford to maintain the needed data resources for state or local estimates.

As Figure 2 depicts, the revised estimates of Indiana personal income released in the past few weeks by the Bureau of Economic Analysis include upward revisions prior to 1977, and almost exclusively downward revisions since then. The downward revision for the fourth quarter of 1981 equaled $1.45 billion or 2.6 percent. Instead of a growth in Indiana personal income of 7.5 percent from the last quarter of 1980 to the same quarter of 1981, the revised figures show a growth of 6.3 percent. The difference in dollars is considerable: $672 million in growth.

Those who work with the data regularly are accustomed to these shocks. They are part of the process by which data resources are improved. They are necessary

Table 2

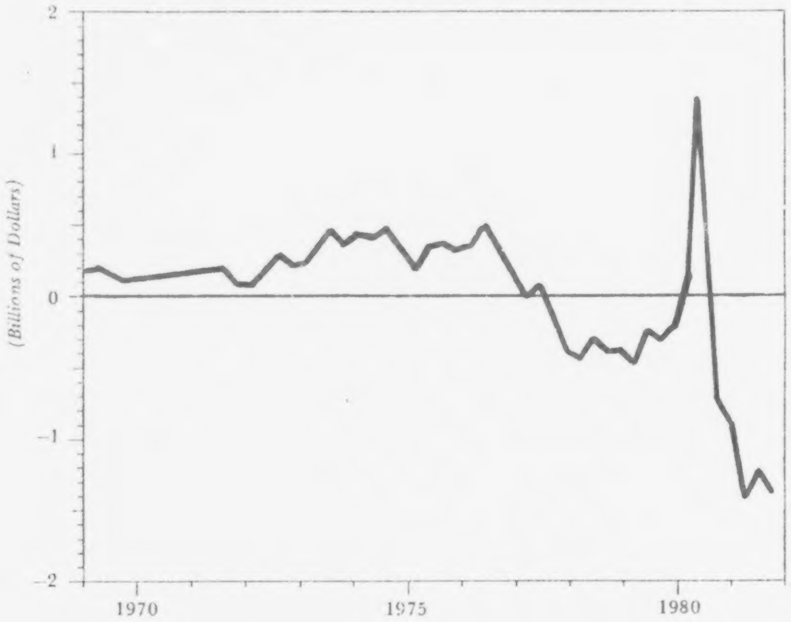
INDIANA PERSONAL INCOME
(Millions of Dollars)

Quarter	*Previous*	*Revised*	*Percent Change*
1971:1	20,080	20,234	.77
1971:2	20,778	20,939	.77
1971:3	20,917	21,106	.90
1971:4	21,542	21,717	.81
1972:1	22,013	22,088	.34
1972:2	22,474	22,543	.31
1972:3	22,871	23,021	.66
1972:4	23,776	24,050	1.15
1973:1	25,169	23,348	.71
1973:2	25,880	26,086	.80
1973:3	26,471	26,799	1.24
1973:4	27,110	27,548	1.62
1974:1	26,953	27,281	1.22
1974:2	27,320	27,714	1.44
1974:3	28,220	28,597	1.34
1974:4	28,612	29,047	1.52
1975:1	28,667	28,979	1.09
1975:2	29,223	29,361	.47
1975:3	30,344	30,647	1.00
1975:4	31,029	31,352	1.04
1976:1	32,058	32,339	.88
1976:2	32.926	33,228	.92
1976:3	33,393	33,841	1.34
1976:4	34,445	34,755	.90
1977:1	25,326	35,467	.40
1977:2	36,690	36,621	–.19
1977:3	37,588	37,614	.07
1977:4	38,695	38,494	–.51
1978:1	39,500	39,060	–1.11
1978:2	40,989	40,496	–1.20
1978:3	42,028	41,676	–.84
1978:4	43,753	43,302	–1.03
1979:1	45,325	44,887	–.97
1979:2	45,774	45.242	–1.16
1979:3	46,442	46,141	–.65
1979:4	47,578	47,194	–.81
1980:1	48,226	47,958	–.56
1980:2	47,717	47,788	.15
1980:3	48,844	50,152	2.68
1980:4	51,331	50,553	–1.52
1981:1	52,903	51,958	–1.79
1981:2	53,603	52,105	–2.79
1981:3	54,685	53,381	–2.38
1981:4	55,200	53,750	–2.63

changes resulting from improvements in technique and information, and sometimes from definitional changes. For the number-using public, including the political leadership, the changes can be traumatic if they go the "wrong" way. It is a tribute to the number producers that they have generated figures which have become important to policy makers. In time it may be necessary for state and local policy makers to give support to the embattled agencies in Washington who generate these needed data.

Figure 2

DIFFERENCES BETWEEN INITIAL AND REVISED ESTIMATES OF INDIANA PERSONAL INCOME



U.S. MAN-HOURS IN INDUSTRIAL PRODUCTION

(Seasonally Adjusted Data)

	United States				Indiana			
	Latest Month (millions)		Percent Change From		Latest Month (thousands)		Percent Change From	
			One Month Ago	One Year Ago			One Month Ago	One Year Ag
Manufacturing	**May**	**738.4**	**0.2**	**−9.7**	**Apr.**	**24,055.0**	**−1.0**	**−10.6**
Food	May	63.3	2.3	−3.2	Apr.	1,413.8	2.1	−0.9
Apparel and textiles	May	71.6	−2.0	−11.7	Apr.	366.6	−0.0	−10.7
Lumber and wood	May	24.0	0.9	−11.9	Apr.	613.5	5.4	−18.7
Furniture	May	16.2	−2.5	−9.5	Apr.	648.7	−2.6	−9.6
Paper	May	27.4	−3.6	−6.4	Apr.	514.0	−1.2	−13.1
Printing	May	46.6	−3.3	−2.3	Apr.	1,118.4	2.6	0.8
Chemicals	May	45.0	1.2	−4.1	Apr.	1,233.4	3.1	−2.5
Petroleum and products	May	8.9	1.7	−6.7	Apr.	170.6	4.3	−19.9
Rubber and plastics	May	28.2	0.7	−7.2	Apr.	1,172.0	2.7	−7.0
Stone, clay and glass	May	23.8	2.1	−10.8	Apr.	825.1	−1.8	−10.3
Primary metals	May	37.1	−2.1	−20.4	Apr.	3,748.7	−2.2	−13.4
Fabricated metals	May	57.5	0.2	−13.3	Apr.	1,987.7	−2.8	−9.2
Nonelectrical machinery	May	95.8	−2.2	−8.7	Apr.	2,610.7	−4.3	−12.2
Electrical machinery	May	80.6	1.2	−4.9	Apr.	3,711.1	0.8	−14.7
Transport equipment	May	73.6	3.2	−7.8	Apr.	3,070.9	0.9	−9.1

Outlook Calendar

The Indiana University School of Business Outlook Panel will tour the state again in November. Led by Dean Schuyler F. Otteson, the faculty group will examine national and state prospects for the year ahead. They will be joined by local faculty experts for selected metropolitan areas.

The Outlook Panel schedule for 1982:

Wednesday	November 3	Columbus Indianapolis
Thursday	November 4	Richmond Fort Wayne Elkhart
Friday	November 5	South Bend Highland
Monday	November 8	Bloomington
Tuesday	November 9	New Albany Evansville
Wednesday	November 10	Terre Haute Kokomo Lafayette

Local times and places will be announced by the organizing Chambers of Commerce.

INDIANA INDUSTRIAL ELECTRICITY SALES
(Seasonally Adjusted in Millions of Kilowatt Hours)

	May 1982	*Apr. 1982*	*May 1981*	*Percent Change From One Month Ago*	*Percent Change From One Year Ago*
Anderson	19.6	27.0	17.7	−27.4	10.7
Bedford	12.0	12.3	16.0	−2.4	−25.0
Bloomington	4.3	3.9	2.7	10.3	59.3
Columbus	17.9	17.8	24.4	.6	−26.6
Connersville	8.2	9.1	8.7	−9.9	−5.7
Crawfordsville	10.4	11.3	8.9	−8.0	16.9
East Chicago	21.0	21.6	27.5	−2.8	−23.6
Elkhart	23.9	22.8	21.5	4.8	11.2
Evansville	45.0	47.6	42.1	−5.5	6.9
Fort Wayne	44.1	43.2	47.4	2.1	−7.0
Frankfort	8.4	8.0	7.6	5.0	10.5
Gary	133.9	144.3	181.9	−7.2	−26.4
Goshen	8.5	9.1	9.0	−6.6	−5.6
Hammond	58.8	55.0	55.6	6.9	5.8
Huntington	4.5	4.9	4.9	−8.2	−8.2
Indianapolis	313.8	344.9	339.1	−9.0	−7.5
Jeffersonville	5.3	5.7	7.3	−7.0	−27.4
Kokomo	64.2	66.2	71.2	−3.0	−9.8
Lafayette	37.6	43.9	41.6	−14.4	−9.6
LaPorte	13.6	14.4	15.1	−5.6	−9.9
Logansport	7.6	7.7	9.7	−1.3	−21.6
Madison	2.3	2.6	2.6	−11.5	−11.5
Marion	33.0	30.5	30.3	8.2	8.9
Michigan City	45.1	43.1	48.5	8.9	−7.0
Mishawaka	3.6	3.0	1.5	20.0	140.0
Muncie	14.3	13.0	18.8	10.0	−23.9
New Albany	4.8	4.8	5.1	0.0	−5.9
New Castle	7.7	8.7	8.6	−11.5	−10.4
Peru	5.1	5.7	4.8	−1.9	6.2
Richmond	21.5	27.6	22.1	−4.9	−2.7
Seymour	2.3	2.3	2.5	0.0	−8.0
South Bend	30.0	26.2	25.6	14.5	17.2
Terre Haute	24.8	31.0	31.0	−20.0	−20.0
Valparaiso	8.8	8.2	8.4	7.3	4.8
Vincennes	2.8	3.2	2.4	−12.5	16.7
Wabash	6.4	7.1	6.7	−9.9	−4.5
Indiana	**1,704.0**	**1,767.1**	**1,893.6**	**−3.6**	**−10.0**

SOURCES: Data provided monthly by public and municipal electric companies.

UNITED STATES–INDIANA BUSINESS INDICATORS*
(Seasonally Adjusted Unless Otherwise Noted; Base Period: 1967 = 100)

		United States				Indiana		
		Latest Month	*Previous Month*	*One Year Ago*		*Latest Month*	*Previous Month*	*One Year Ago*
EMPLOYMENT								
Nonagricultural employment	May	136.7	136.8	138.5	May	114.3	114.6	119.4
Manufacturing employment	May	98.3	98.5	104.5	May	83.8	84.7	92.9
Average weekly hours (no.)+	May	39.0	38.7	40.1	May	39.2	39.2	40.4
Average weekly earnings ($)+	May	329.55	325.47	317.59	May	381.8	381.0	376.1
Nonmanufacturing employment	May	152.6	152.8	152.6	May	134.7	135.1	137.1
Unemployment rate (%)	May	9.5	9.4	7.5	May	12.1	12.6	9.8
Unemployment-married males (%)	May	6.1	6.0	4.1	–	–	–	–
Continued unemployment claims	–	–	–	–	May	432.7	460.8	504.5
PRODUCTION								
Bituminous coal production	May	156.4	156.4	75.8	–	–	–	–
Industrial electricity production	Feb.	136.0	139.4	153.7	–	–	–	–
Industrial electricity sales	–	–	–	–	May	148.6	154.6	165.0
Manufacturing production	May	139.1	139.2	152.8	May	136.5	139.9	150.7
Raw steel production	May	58.6	61.6	100.0	May	97.9	99.2	157.3
CONSTRUCTION								
Construction activity–Total	Apr.	300.6	302.4	318.3	May	184.2	175.1	218.2
Residential housing starts	May	84.5	69.1	91.2	May	39.8	68.4	71.4
Residential expenditures	Apr.	302.9	302.5	375.1	May	171.9	170.8	268.9
Nonresidential expenditures	Apr.	299.3	302.2	290.6	May	179.9	182.5	221.5
Public expenditures	Apr.	196.4	207.7	220.7	–	–	–	–
Public works and utilities	–	–	–	–	May	196.7	168.5	143.2
OTHER INDICATORS								
Personal income per capita ($)	Apr.	10,929.1	10,898.8	10,258.7	81:IV	9,839.0	9,762.0	9.219.0
Passenger car sales (thousands)+	May	774.0	669.0	734.0	Apr.	13.2	14.8	15.8
Year to date (thousands)	May	3,388.0	2,614.0	3,860.0	Apr.	47.1	33.9	65.7

*Current indicators are preliminary and subject to revision.
+Not seasonally adjusted.
SOURCES: Data on Indiana construction from McGraw-Hill Information Systems Company; Indiana passenger car registration from R.L. Polk & Co.; indexes of raw steel production for the United States and Indiana courtesy of American Iron and Steel Institute, Washington, D.C.; all other data from U.S. and Indiana government agencies and Division of Research, School of Business, Indiana University.

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Indiana Business Review

Volume 57 August 1982

David A. Reed and Charles A. Sim **Economic Development in Indiana: Retrospect and Prospect / 2**

Morton J. Marcus **Recession's Widespread Impact / 9**

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Economic Development in Indiana: Retrospect and Prospect

In this issue . . .

Economic development is the leading topic of discussion around the Hoosier state this summer. The recent recession has heightened awareness of the state's problems, increased concern over our potential, and brought forth a new citizen involvement.

David Reed and Charles Sim offer an important overview of trends in the state's economy and the policies which the Indiana Department of Commerce has developed to help business in the state. This statement clarifies the direction and thinking behind current public programs.

The long-term view of Reed and Sim is reinforced by an examination of personal income in the past year. The divergence of Indiana from the national economy is examined as this month's feature in *Indiana's Business.*

Basic to economic development plans is knowledge of our communities. A brief note in this issue indicates that the latest data are now available from the 1980 Census of Population and Housing through the Indiana State Data Center.

Morton J. Marcus,
Editor

INDIANA BUSINESS REVIEW

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A STATEMENT OF THE ECONOMIC SITUATION

During the first quarter of 1982 almost 350,000 Indiana citizens were unemployed and looking for work. The measured unemployment rate was 12.5 percent in March. The unemployment rate is a statistic which gets a great deal of attention. Though it is not often recognized, the unemployment rate really represents two distinct symptoms of the economic distress of the state:

> –The permanent loss of an estimated 55,000 manufacturing jobs in the state from 1977 to 1980.
> –The great sensitivity of the state's economy to swings in the national economy which leads to exaggerated fluctuations in employment and income.

These are symptoms of our economic distress with which we are all familiar. Other symptoms may be just as revealing of the seriousness of the problem though they often get less attention:

> –Per capita personal income in Indiana in 1980 was $8,900, only 94 percent of the national average. The position of Indiana relative to the nation has declined steadily since 1954.
> –Manufacturing in Indiana accounted for nearly 41 percent of the earned income in 1979. This compares with 26 percent for the U.S. Relative to the U.S., we have become more dependent on manufacturing as a source of income in the last decade.
> –Value added per dollar of wages paid in Indiana manufacturing is below the national average and has been declining steadily since the early 1960s.
> –Capital investment per dollar of wages paid in Indiana has declined from the mid-1960s when it slipped below the national average for the first time and where it has remained ever since.
> –Of the five major industries in which we are specialized, only one, rubber and miscellaneous plastic products, is a high growth industry nationwide. The others, including primary metals and transportation equipment, were below the U.S. average growth rate in manufacturing for the 1970s, and will continue to be slow growers in the foreseeable future.

To state the situation succinctly, Indiana is dependent on a few manufacturing industries for a high and rising portion of its economic activity. Those industries are generally growing slowly and are very sensitive to the fluctuations in the national economy. Investment and productivity in Indiana are declining relative to the nation. We are experiencing high cyclical unemployment, permanent loss of manufacturing jobs, and lost growth in income and population.

These current economic conditions in Indiana are a reflection of long-term national economic trends, several national trends unique to the 1970s, and the cyclical nature of the national economy. The purpose of this paper is to examine the historical development and performance of the Indiana economy to form a perspective on current economic conditions in Indiana. The perspective provides a context for a discussion of future economic development in Indiana which includes a profile of the state's economic development resources and the Indiana Department of Commerce's economic development programs.

LONG TERM NATIONAL ECONOMIC TRENDS

For many, the immediacy of current conditions seems to overwhelm the historical context and long-term trends of which the present and recent past are only small expressions. Economic growth, the sustained increase in output per capita, is a long-term process fueled by population growth and guided by technological change and political power. The process is rarely a smooth one. Often it involves changes in the allocation of the factors of production: labor, capital, and natural resources. It frequently pits the established elements of the economic order against the forces of change in a contest for access to those factors of production. It is a process characterized in the short-term not by smooth transitions but rather by dislocations, misallocations, and fierce competition in both the political and economic arenas. Stress pervades the entire economic system as it tries to adjust to emerging demographic and technological realities.

Over the last century, at least four major national economic trends have played a significant role in shaping the Indiana economy:

- The role of agriculture in the economy has declined significantly. Agriculture accounts for a far smaller share of national output and both a much smaller share and a smaller absolute amount of employment.
- Manufacturing dominated the economy of the country for much of the period in question. Its share of output and employment rose steadily until about 1950. Much of this growth was concentrated in heavy manufacturing. Subsequently, the manufacturing sector's employment share began to level off, and after about 1960 began to decline.
- There has been a steady and continuous increase in the services sector's share of output and employment.
- There has been significant convergence of the economies of the subnational regions of the country. Populations, labor force structures, and per capita personal incomes have become much more similar over the last hundred years. This trend has accelerated greatly in the last two decades as the industrialization and urbanization of the South and West led to higher per capita incomes and greater relative representation of the manufacturing sector in those regions.

TRENDS IN THE DEVELOPMENT OF THE INDIANA ECONOMY

The national trends away from an agrarian economy and toward increasing concentration in manufacturing were mirrored and magnified in the Indiana economy. As this century has progressed, the state's economic link to agriculture and forestry has diminished, while its base in manufacturing has grown. Throughout the past 80 years, Indiana has had a larger percentage (than the nation) of its labor force in the manufacturing sector, and particularly in the durable goods portion of the sector. Indiana's economy has not shared fully in the robust growth of the services sector which is an emerging trend in the national economy. The relative importance of this sector in Indiana has actually declined since the turn of the century (see Table 1).

This concentration in manufacturing, and in particular durables manufacturing, stemmed from many factors. Among them were proximity to natural resources, central location in proximity to markets, good transportation, and a reasonably abundant supply of labor (many of whom were displaced agricultural workers, at least early in the state's industrial development). Many of these factors continue to exist. That, coupled with the inertia inherent in the economy, has resulted in the continued dominance of durables manufacturing in the state's economy.

As Indiana moved from an agrarian to an industrial economy its per capita personal income rose relative to U.S. averages for the period 1880-1940. Beginning in 1940 it moved above the U.S. average. It peaked at 106.3 percent of the U.S. average in 1953 and remained above the U.S. figure until 1966. Since then it has continued the relatively steady decline begun in 1953 until, by 1980, it was approximately 94 percent of the national average. This relative decline stems in part from slow growth in Indiana, but it also has come about as a result of high rates of income growth in the South and West where industrialization came much later than it did here.

RECENT TRENDS IN INDIANA

The state's manufacturing base, particularly in metals production, which

Table 1

PERCENT OF THE LABOR FORCE IN MANUFACTURING AND SERVICES IN THE U.S. AND INDIANA 1900-1980

	Manufacturing		*Services*	
	United States	*Indiana*	*United States*	*Indiana*
1900	14.6	12.4	16.9	15.7
1940	23.2	29.5	22.5	18.8
1950	26.4	34.3	23.7	18.6
1960	28.5	35.6	26.0	24.3
1970	26.1	34.4	30.8	28.1
1980	22.3	30.6	40.9	34.3

NOTE: Data for 1980 for employed persons 16 and over. All previous years' data are for labor force 14 years and over. Services include finance, insurance and real estate; business and repair services; personal entertainment and recreation services; professional and related services; and public administration.

SOURCE: Census of Population, U.S. Bureau of the Census.

developed over the 1900-1940 period, positioned the state well to support the nation's war efforts during the 1940s. During the 1940s Indiana's total employment increased 31.3 percent compared to a national employment increase of 24.5 percent. The state's favorable employment growth rate during the 1940s can be attributed to the high representation in the state of industries which were growing fast nationally and to the fact that Indiana's firms were growing faster on the whole than their respective industries were growing nationally.

In the 1950s, total employment growth in Indiana was less than half of the national growth rate, 4.0 percent for Indiana compared to 9.3 percent for the U.S. The state continued to have a large representation of industries which were growing fast nationally, but the state's firms overall were growing more slowly than their respective industries nationally. Durables manufacturing, contract construction, transportation, communication and utilities, retail trade, and nondurables manufacturing grew more slowly in Indiana than at the national level during the 1950s.

During the 1960s, total employment growth trends changed dramatically from the prior decade. Total employment in the U.S. grew by 21.0 percent and Indiana total employment grew by 19.8 percent or 327,300 jobs. During the 1960s, the state's employment was concentrated in industries which were slow growing industries nationally for the first time. However, several sectors, including durables manufacturing, contract construction, retail trade, services, and government grew more rapidly in Indiana than at the national level.

In the 1970-80 period, Indiana's total employment growth rate was slightly more than half of the national growth rate. U.S. employment grew by 25.2 percent while Indiana employment increased by 13.1 percent, adding 259,300 jobs to the Indiana economy. The state's slow growth again resulted from employment concentration in several slow growth sectors, including durables manufacturing, nondurables manufacturing, and agriculture. In addition, several sectors, including durables and nondurables manufacturing, retail trade, government, finance, insurance, real estate, and agriculture grew less rapidly in the 1970s in Indiana than at the national level.

The concentration of the state's economy in the durable goods sectors and more specifically in metals-related industry such as steel production, automobile parts, household appliances, and fabricated metal products has several implications for future economic development:

> –The concentration in metals related industry indicates that the growth of the state's economy could be closely related to the national growth of these industries and their locational preferences. Should demand change nationally for the products of these industries, Indiana's economy would be particularly affected. Should the locational production preferences of these industries be altered, the state's economy could be affected.
> –The state's strength in durable goods manufacturing implies a strong sensitivity to the national business cycle. Demand for durable goods tends to decline more rapidly during economic downturns and increase more rapidly during economic upturns.
> –Since production in the metals industries is concentrated in large facilities, the state's economy is linked to the ability of these facilities and the firms which operate them to grow and remain competitive.
> –The mass market required by these industries implies the need for an efficient transportation system to move the products to the market.
> –The capital intensity of the production facilities indicates the importance of available capital to the industries and the Indiana economy.
> –Since these products are traded on an international basis, the international competitiveness of these industries and their trade balances is particularly important to Indiana.

RECENT NATIONAL ECONOMIC TRENDS

Although the Indiana economy's performance in the 1970s was a reflection of long-term trends in the national economy, there were additional trends nationally in the 1970s which had particular affect on the Indiana economy.

The slowing national rate of growth in per capita GNP and disposable personal income per capita during the 1970s is generally attributable to two factors: rampant inflation and stagnating productivity (output per worker hour). Productivity growth slowed in the mid-1960s. During the 1947-65 period, productivity growth averaged 3.2 percent a year; for 1965-73, 2.3 percent; from 1973-78, 1 percent; and productivity actually declined in 1979.

The reasons for the decline in productivity growth include:

> –A decline in the quality of the labor force as young, inexperienced, and female, inexperienced workers joined the labor force in great numbers.
> –A slowdown in the growth of capital investment per worker from 2.7 percent a year from the mid-1950s to mid-1960s to about 1.5 percent a year since 1967.
> –The growth of federal regulations on business which imposed enormous compliance costs, and led to time-consuming uncertainty among business decision makers.
> –Rampant inflation which retards capital investment by shortening the time horizon of decision makers, and increasing interest rates on funds. (It should also be noted that lack of productivity growth contributes to inflation.)

One of the ramifications of the high inflation/low productivity growth in the 1970s in the U.S. was the deterioration of the nation's international economic position. In the 1970s the U.S. lost 23 percent of its share of the world market, compared with a sixteen percent decline during the 1960s. Few industries have been exempt from the erosion of the U.S. industrial position, but those most affected include motor vehicles, aircraft, organic chemicals, telecommunications apparatus, nonelectrical machinery, metal-working machinery, and agricultural machinery.

The gloomy 1970s in Indiana appear to reflect the culmination of long term national trends previously identified—the slow growth of the manufacturing sector since 1960 and the convergence of regional economies which favored regions which at the beginning of the century were less developed—and several national trends, including high inflation and low productivity growth, unique to the 1970s.

In 1979, manufacturing accounted for nearly 41 percent of Indiana's earned income, compared to 26 percent for the U.S. The manufacturing sector is uniquely impacted by the business cycle. Demand for durable goods tends to decline more rapidly during economic downturns and increase more rapidly during economic upturns. The Indiana economy is particularly sensitive to the cyclical behavior of the nation's economy.

Current Indiana economic conditions are thus a result of the slow long-term growth of manufacturing, complemented by specific national trends during the 1970s, and the particular sensitivity of the manufacturing sector to dips in the business cycle. These three factors have combined to produce particularly adverse economic conditions for Indiana.

AN ECONOMIC DEVELOPMENT PROFILE

Future economic development in the state hinges on an improved national economy and on the location decisions of firms looking to expand or relocate their production facilities. In making a location decision a firm will assess factors related to the firm's production process, which takes inputs (such as labor, natural resources, and energy), and produces saleable outputs as well as waste products. It is the relative availability, price, and quality of inputs, the markets for outputs, and the facilities for waste products in an area which affect a firm's location decision. Below, these factors are briefly profiled for Indiana, followed by a brief analysis of their role in economic development.

Population and Labor Force

—The size and age distribution of the population defines the size of the potential labor force. Indiana's 1980 population of 5.49 million was 2.42 percent of the U.S. population. In 1980, 55.9 percent of the state's population was in the prime labor force age group of 20-64, compared to 56.7 percent at the national level. The state had a slightly younger population in 1980 than the nation. While 32 percent of the U.S. population was under 19 years of age, 33.5 percent of the Indiana population was under that age.

—The size of the state's population in the prime labor force age-group combined with labor force participation rates determines the size of the labor force. The state's labor force was 2.61 million in 1980. The quality of the labor force may be measured by its educational attainment and its attitude toward work. About two-thirds of the Indiana and U.S. population over 25 years of age are high school graduates. However, at the national level, about 32 percent have had some college, while in Indiana about 24.3 percent of those over 25 years old have had some college. Indiana ranked 33rd lowest among the states in 1980 in percent of population with high school degrees, 47th lowest in percent of population with 1-3 years of college and 47th lowest among the states in percent of population with four or more years of college. In 1940, Indiana accounted for 2.24 percent of the nation's population with four or more years of college, and by 1980 the state accounted for only 1.80 percent.

—Worker attitudes may be measured in part by employee quit rates and work stoppage data. Manufacturing employee quit rates in Indiana have been below the U.S. rate in each of the years over the 1965-1980 period. Over the 1967-1979 period, manufacturing work stoppages in Indiana averaged 194 per year or 3.81 percent of the national total. During this period, Indiana manufacturing employment composed 3.65 percent of the nation's manufacturing employment. At the national level, the work stoppages resulted in the loss of 0.79 percent of the total manufacturing working days while in Indiana 0.85 percent of working days were lost due to work stoppages.

Unemployment

—The unemployed can be viewed as a source of readily available labor. Over the 1977-1980 period, annual unemployment averaged 177,000 in Indiana. The annual unemployment rate in Indiana was below the nation's in 1977 and 1978 but above the nation's in 1979 and 1980. About two in every three of those unemployed in 1980 in Indiana were unemployed for less than fourteen weeks. The state's unemployment rate was about twice as high among blue collar workers than white collar workers from 1977 through 1979 and more than three times higher in 1980. In 1980, blue collar workers accounted for 63.0 percent of the state's unemployed, while accounting for 40.8 percent of the state's labor force.

—The best record of those seeking work in Indiana is provided by those registered with the State's Job Service. Nearly two-thirds of those registered with Job Service are high school graduates or have had some college. Six in ten are between the ages 20 and 34, while this age group accounts for 45 percent of the state's overall population between 20 and 64.

Selected Resources

—Northern Indiana possesses very substantial water resources, while ground water availability is somewhat more limited in central and southern Indiana.

—Indiana communities over 10,000 population generally have considerable remaining unused capacity in their wastewater treatment and public water supply systems. Wastewater treatment capacity exceeds current annual average flow by at least 30 percent in 30 of the 58 Indiana communities of over 10,000 population. Public water supply treatment capacity exceeds current water usage by at least 30 percent in 40 of the 58 Indiana communities.

–There are a total of 114 landfills located in 77 Indiana counties. Four Indiana landfills will accept specialty/hazardous wastes.

Energy

–In 1979, Indiana produced 25 percent of the energy consumed within the state. The remainder is imported from out-of-state. As a result of the importation of a large amount of energy, large dollar amounts flow out of Indiana to pay for energy consumed. The net outflow of dollars from Indiana for energy has been estimated for each year during the 1960-1979 period. In 1960, the net outflow was $658 million or 5.05 percent of estimated Indiana Gross State Product. By 1979, the outflow had grown to $5,272 million or 9.25 percent of Indiana Gross State Product.

–The U.S. average monthly electric bills for a particular industrial service have ranged from $1,163 in 1969 to $4,128 in 1981, for a twelve year average monthly bill of $2,271. The Indiana average monthly electric bill for the same industrial service has ranged from $1,136 in 1969 to $2,623 in 1981, for a twelve year average of $1,784 per month. Based on the twelve year average monthly bill, an industrial consumer located in Indiana would have saved almost $490 per month or $5,900 per year. In addition, it appears that electric energy costs for industrial service in Indiana have generally fallen relative to the nation over the period.

–The U.S. average natural gas price for industrial service has ranged from $.35 per million BTUs in 1966 to $2.81 per million BTUs in 1980, for a fifteen year average price of $.98 per million BTUs. The Indiana average natural gas price for industrial service has ranged from $.41 per million BTUs in 1966 to $2.59 per million BTUs in 1980, for a fifteen year average price of $.96 per million BTUs. In 1966 the price of industrial service natural gas in Indiana was 117 percent of the U.S. average. By 1980 the price of industrial service natural gas was only 92 percent of the U.S. average.

Transportation

–Indiana has 12 interstate highways. Forty-two of the state's cities over 10,000 population are located less than 10 miles from an interstate interchange. All Indiana cities with a population over 10,000 with the exception of Greenfield have some rail service. General aviation air service is available from 53 airports located in 44 Indiana cities over 10,000 population. Most of the remaining cities are within easy driving distance of an airport.

–Indiana has two ports and is in the process of developing a third. Burns Water Harbor is located at the south end of Lake Michigan, the Southwind Maritime Centre is located on the Ohio River in the state's southwest corner, and the Clark Maritime Center is under development on the Ohio River in the state's southeast quadrant.

Industrial Park Space

–The state has 111 industrial parks with 22,700 acres. About 13,500 acres or 60 percent of the space is still available for development. Of the available acres, 3,494, or 26 percent, are fully serviced (rail, water, sewer).

A firm evaluating an Indiana location would likely find a readily available labor supply as suggested by the number of Indiana Job Service registrants. In addition, worker attitude appears generally favorable in Indiana as supported by low employee quit rates and work stoppage episodes only slightly above the national average. The work stoppage data suggest that the perception of Indiana as having a serious "labor problem" is probably inaccurate.

Quality of labor force is also related to its educational background. Here, there is cause for concern in Indiana. The lower percentage of the adult population with a college education in Indiana suggests it may be difficult to attract firms to Indiana which require a highly educated work force. This may become a more serious problem in the future as economic growth is expected to occur in industries which employ highly educated workers.

The state's mature transportation system includes ready access to the nationwide interstate highway system. Of concern is the number of Indiana's major communities that are served by only one rail-line. This suggests that government must be concerned about the future viability of these lines, and specifically their service to these one rail-line communities.

The ample availability of water in Indiana may become a more significant factor if expected water shortages materialize in other parts of the country. The state's communities also appear to have the additional unused capacity in their water and waste treatment facilities to handle additional industrial development. The availability of landfills to handle hazardous wastes will become a more important location factor as solid waste regulations are applied. The availability of such facilities should be a priority concern of government.

The net outflow from Indiana of over 8 percent of the state's Gross State Product for energy indicates that growth in the Indiana economy is being reduced by the flow of dollars out of Indiana. This outflow of funds for energy is a major economic development concern for Indiana.

Electric and natural gas costs for industrial service are very competitive in Indiana. This suggests that Indiana may be an attractive location for energy intensive industries.

Indiana has an ample supply of available, fully serviced industrial park space. Only in the southern part of the state does there appear to be any immediate need to consider additional space. In other areas of the state, the available supply of space suggests that communities should carefully assess the costs and likely benefits of additional industrial park space.

POLICIES, PROGRAMS, AND ACTIVITIES OF THE INDIANA DEPARTMENT OF COMMERCE

The Indiana Department of Commerce recognizes the essential fact of economic development that the decision made by an investor to commit resources to a particular investment project in a particular location is a decision best left to the private sector. Such decisions are generally made carefully, with due consideration given to ensure that the resources involved are being allocated efficiently. We do not subscribe to the approach which has led some states to engage in intense competition in offering huge subsidies to investors to induce favorable location decisions. Nevertheless, governments do have a role to play in enhancing the prospects of economic development and in ensuring the success of those investment projects which are undertaken within their borders. The economic development policies, programs and activities of the government of the State of Indiana must address the following ten elements.

Policy Analysis and Economic Research. Just as economic development requires the investment of private resources it also requires the investment of public resources. These public resources are in short supply in Indiana, and it is absolutely crucial that commitments of these resources be made only on the basis of well thought-out development policies based on competent research. The Department has in place two major research analysis activities. One is designed to produce recommendations for long-term economic development policies including policies related to infrastructure and capital improvements, industrial development, utilization of natural resources, taxation, energy development, conservation, and like issues. The second program is intended to provide focus for our immediate industrial development activities. The result of this activity is the identification of one or more industries on which the promotional activities of the department will be concentrated, and toward which the department will devote much of the other development resources available. These industries are being selected for their job generation potential, their growth prospects, their stability, and the degree to which their locational needs meet the attributes Indiana has. The first industry targeted to receive the special attention of the Department is the communications electronics industry.

Technology Innovation and Transfer. Technological change is the catalyst which can ignite an economic renaissance in the United States. New products, and old products produced in new ways, hold promise to be one key to long-term economic growth in this country, and more so in this region and state. Programs have been developed to help enhance and organize research activities in Indiana, to assist in the creation of private enterprise to develop the economic potential of that research, and to ensure that our existing industrial base has the best possible access to the latest technologies pertinent to each industry. Three efforts have been initiated. First, the Indiana Corporation for Science and Technology will function to draw together the human and financial resources of the government, private, and education sectors to encourage research and the development of technology-based industries in the state. Second, the Corporation for Innovation Development was created by the state as a private corporation to generate venture capital for investment in innovative business enterprises. Third, the Indiana Research Expense Credit provides a credit toward state corporate income tax liabilities for incremental expenditures on research.

Small Business Development. Much of the real employment growth in the economy is attributable to firms large enough to be financially stable yet small enough to respond quickly and creatively to changing conditions in high growth industries and/or markets. Accordingly, the state has established a Small Business Development Corporation to provide counseling, technical assistance, continuing education, and regulatory ombudsman services to small businesses at four regional sites throughout the state.

Natural Resources Development. The Department of Commerce, in conjunction with other state agencies, is working to develop a policy governing the development of natural resources in Indiana. The policy is intended to address a broad spectrum of natural resource issues, but will concentrate on two matters at the outset. First, the revenue outflows which result from the importation of energy into Indiana are a serious drain on our economic resources, and the Department is working to develop a policy to encourage the utilization of the entire range of energy resources available in Indiana in ways consonant with sound environmental management practices. Second, the availability of water may become a serious constraint on development in many areas of the country and an important development asset in Indiana. A policy is being developed which will permit Indiana to take full advantage of its abundant water resources without impinging on the health, safety, or recreational opportunities of the citizens of the state.

Manpower Development and Retraining. The economics of the state and the nation are in flux. New products and new production technologies are becoming increasingly prevalent. It is of critical importance that displaced workers and new entrants into the work force have the skills needed to make them employable. It is also essential that businesses have the pool of trained labor they need to operate successfully in Indiana. The Higher Education Commission, the Board of Vocational and Technical Education, the Indiana Office of Occupational Development, the Department of Public Instruction, and others are working to ensure that Indiana schools provide appropriate curricula, that retraining is available to the largest possible number of displaced workers, and that employers are offered a wide range of options to assist them in obtaining employees with the skills they require.

Transportation. One of Indiana's key economic strengths is the centrality of its location which gives businesses located here quick and easy access to materials and markets. Location alone is not sufficient to create that access. A well developed and well maintained transportation system is also necessary. A program of port development and road maintenance has been undertaken to ensure that publicly owned transportation facilities are more than adequate to meet the state's needs. The Department of Commerce has worked with the Legislature to establish an Industrial Rail Service Loan Fund to help ensure continuing rail service on lines threatened with cessation of service by Conrail.

Economic Development of Local Communities. The investment location decision is a commitment to a community, not a state. In order to enhance the ability of local communities to work with economic development prospects, and to help ensure the availability of suitable property, utility services, and transportation facilities, the Department has undertaken a multifaceted program to assist local communities in their economic development efforts. Included are such things as a program to help communities organize for economic development and identify development assets; a program to provide communities with financial assistance in their efforts to meet the needs of new or expanding businesses; a program to provide loans to communities, the proceeds of which may be reloaned to businesses to assist them in purchasing real or personal property; and a program to assist in the redevelopment of economically distressed urban areas.

Labor-Management Relations. The labor movement in Indiana has played an important role in the development of this state. It can play an even more important role in assisting in the solution of Indiana's economic problems. To ensure the greatest possible communication and cooperation between labor and management in Indiana a labor-management advisory council has been established by the Legislature and appointed by the Governor. The council is composed of equal representation from management and labor and it is intended that it will act to help resolve both short-term and long-term issues between the two groups.

Agricultural Development. The agricultural base of the state has an important stabilizing influence on the Indiana economy. It is also important because it serves as a major source of revenue inflows from beyond the state's borders. The Department has undertaken a major program commitment to improve the processing and marketing of agricultural products, and machinery and equipment produced here.

Business Climate. In a world of spiralling costs and prohibitive interest rates it is becoming increasingly important for state government to exhibit a reasonable degree of fiscal restraint to help reduce the tax burden on business and also to exhibit a willingness to assist businesses in obtaining the financing necessary to enable firms to locate or expand here. Among tax initiatives established recently are the adoption of the accelerated cost recovery system of depreciation allowances which was recently written into federal law; an abatement of property taxes for investment in real property and machinery in urban development areas; and the aforementioned tax credit for research expenditures. A wide range of programs is available to the Department to assist businesses in obtaining capital at reasonable cost. Among these programs are:

> –The Indiana Development Commission, which may guarantee loans, issue single project industrial revenue bonds, issue multipurpose industrial revenue bonds to fund-pooled financings, and guarantee industrial revenue bonds issued by local government units.
>
> –The Indiana Investment Incentive Program, which provides grants to municipalities which may be loaned to private entities for certain economic development purposes.
>
> –The Corporation for Innovation Development described earlier.

CONCLUSION

The programs and policies enumerated above were the outgrowth of the recognition that the economy of the State of Indiana has serious problems. Those problems are not insoluble. However, their solution will require the cooperation and concerted efforts of business, labor, government, education, and the community at large. The most important role of state government is to ensure that conditions exist in the state which encourage the development of its economy and with that the health and welfare of its citizens. To carry out that role the Legislature, the Administration, and the Department of Commerce have worked to create innovative responses to the new economic circumstances that Indiana faces. The problems are not yet solved, but the state has a much better array of tools than ever before to help in their solution.

Indiana's Business

RECESSION'S WIDESPREAD IMPACT

Table 1

COMPARATIVE CHANGES IN PERSONAL INCOME—1981:1 TO 1982:1

	Indiana	*United States*	*Difference Indiana-United States*
Farm	−22.2%	−5.4%	−16.8%
Non-Farm	+0.4%	+6.3%	−5.9%
Private	−0.1%	+6.1%	−6.2%
Ag., Serv., For., Fish, & Other	+3.3%	+2.4%	+0.9%
Mining	−2.4%	+16.5%	−18.9%
Construction	−7.4%	−0.6%	−6.8%
Manufacturing	−1.8%	+3.8%	−5.6%
Nondurable Goods	+5.1%	+5.8%	−0.7%
Durable Goods	−3.8%	+2.8%	−6.6%
Transportation and Public Utilities	+0.2%	+6.8%	−6.6%
Wholesale Trade	−0.8%	+6.6%	−7.4%
Retail Trade	+0.9%	+4.8%	−3.9%
Finance, Insurance, and Real Estate Service	+4.0%	+7.8%	−3.8%
Services	+6.4%	+10.2%	−3.8%
Government	+4.1%	+7.4%	−3.3%
Federal, Civilian	+2.8%	+6.9%	−4.1%
Federal, Military	+9.7%	+16.2%	−6.5%
State and Local	+4.2%	+6.4%	−2.2%
Total Labor and Proprietors' Income	**+0.1%**	**+6.1%**	**−6.0%**
Derivation of Personal Income By Place of Residence	+13.1%	+15.6%	−2.5%
Transfer Payments	+13.5%	+10.8%	+2.7%
State U.I. Benefits	+19.8%	+17.4%	+2.4%
Transfers Excl. State U.I.	+13.2%	+10.5%	+2.7%
TOTAL PERSONAL INCOME	**+3.9%**	**+8.2%**	**−4.3%**

Of all the fifty states, Indiana had the least growth in personal income in the past year. The extent of Indiana's dramatic difficulties in the recent recession are revealed by an examination of the latest personal income data from the U.S. Bureau of Economic Analysis.

In all but one small sector, Indiana trailed the national performance during this period of time. A 3.3 percent increase in income generated through Agricultural Services, Forestry, and Fisheries within the state exceeded the national increase of 2.4 percent; this small sector, however, accounted for only 0.2 percent of the state's earned income. Income from farming was down by 22 percent in this state compared with a national decline only one-fourth as severe (see Table 1). But the greatest differential between Indiana and the nation was in Mining, which fell by 2.4 percent in the Hoosier state while advancing by 16.5 percent nationally. Durable goods production in Indiana also ran counter to the national pattern. For the whole country, income derived from manufacture of durable goods rose by 2.8 percent; in Indiana this sector declined by 3.8 percent. Wholesale trade was the only other Indiana sector to move contrary to the national pattern, falling by 0.8 percent here while rising by 6.6 percent nationally.

Construction was the only sector in the nation to experience a decline in nominal values for earned income during the period. A 0.6 percent decline across the nation was well exceeded by Indiana's decline of 7.4 percent. In all, earned income (labor and proprietors' income) from private sector employment declined in Indiana by 0.1 percent while the nation saw an increase of 6.1 percent. Government generated earnings did rise in Indiana by 4.1 percent, but increased nationally by 7.4 percent. In terms of federal civilian and military earnings, the state trailed the nation more than it did state and local contributions to earnings.

Dividends, interest, and rent are fast growing components of personal income, rising by 15.6 percent nationally. But Hoosiers realized an increase of only 13.1 percent in this area.

Transfer payments, which are largely intended to offset economic distress, seemed to be doing just that job, growing at a faster rate than in the nation as a whole.

From the first quarter of 1981 to the same quarter of 1982, total personal income in the United States rose by 8.2 percent, but climbed by only 3.9 percent in Indiana. (All figures are nominal; that is, they reflect unadjusted changes in price level.) Of all the Great Lakes states, Indiana's record was the poorest for this period. As expected, the Great Lakes had the poorest record of all nine regions in the nation (see Table 2).

Indiana's economic performance during the first quarter of 1982 was superior to neighboring Illinois (0.4 percent vs. 0.1 percent). The Hoosier state did grow faster than Michigan in the third and fourth quarters of 1981. There is little solace, however, in such short-term advantages.

The record of the coming year, in which some recovery is anticipated, should show the Hoosier state ahead in selected areas. If we just keep pace with the nation, however, we will be doing better than we have for some time past.

Morton J. Marcus

Table 2

PERCENT CHANGE IN PERSONAL INCOME–1981:1 TO 1982:1

UNITED STATES	8.2	*REGIONS*	
SELECTED STATES		Northeast	8.2
Indiana	3.9	Middle Atlantic	8.3
Illinois	5.8	East North Central (Great Lakes)	5.6
Michigan	5.5	West North Central	7.5
Ohio	6.1	South Atlantic	8.7
Wisconsin	5.8	East South Central	7.1
Kentucky	7.2	West South Central	11.1
California	12.2	Mountain	9.6
New York	8.9	Pacific	9.2

MAN-HOURS IN INDUSTRIAL PRODUCTION
(Seasonally Adjusted Data)

	United States				*Indiana*			
	Latest Month **(millions)**		*Percent Change From*		*Latest Month* **(thousands)**		*Percent Change From*	
			One Month Ago	*One Year Ago*			*One Month Ago*	*One Year Ago*
Manufacturing	**June**	**739.5**	**0.2**	**−9.0**	**May**	**23,383.8**	**−2.6**	**−12.5**
Food	June	63.6	0.7	−2.7	May	1,462.1	4.5	−2.2
Apparel and textiles	June	70.0	−2.6	−12.8	May	380.1	3.4	−11.0
Lumber and wood	June	24.4	−0.1	−9.6	May	625.2	0.3	−19.6
Furniture	June	16.2	−0.1	−9.3	May	627.1	−4.1	−18.3
Paper	June	26.7	−2.3	−7.0	May	536.9	4.4	−8.2
Printing	June	45.3	−3.2	−4.0	May	1,108.6	0.2	−2.4
Chemicals	June	44.5	−0.6	−5.3	May	1,315.5	0.2	2.9
Petroleum and products	June	9.1	1.1	−2.9	May	178.5	5.9	−15.0
Rubber and plastics	June	28.0	−0.5	−9.0	May	1,198.3	1.6	−7.9
Stone, clay and glass	June	24.2	1.5	−10.9	May	847.7	3.0	−8.9
Primary metals	June	36.6	0.6	−21.4	May	3,418.2	−8.4	−17.5
Fabricated metals	June	57.6	−0.2	−11.2	May	1,931.7	−2.7	−10.9
Nonelectrical machinery	June	91.6	−4.2	−10.5	May	2,559.0	−1.2	−15.3
Electrical machinery	June	79.9	−0.4	−5.5	May	3,739.6	1.3	−13.6
Transport equipment	June	72.5	−0.6	−7.0	May	3,023.6	−1.3	−12.5

MORE DATA FROM THE 1980 CENSUS: SECOND SUMMARY TAPE HAS GREATER DETAIL THAN FIRST

The Indiana State Data Center has received Summary Tape Files 2A and 2B from the 1980 Census. These two STF series furnish data down to the level of census tracts and places of 1,000 or more and present more numerous and detailed tabulations of complete-count (100 percent) data than are found in STF1. The computer tapes are the source of data which appear in the General Population Characteristics reports, Detailed Housing Characteristics, and the complete count tables of census tract reports.

STF 2A provides data for states, SMSAs, counties, places of 10,000 or more and census tracts. STF 2B presents data for states and selected areas down to places of 1,000 or more. The data are presented for the total population and by race and Spanish origin and provide more detail than previously available. For example, age is presented by single years to age 99, cross-tabulated by sex (table B8). The Indiana State Data Center has that table available in paper copy for the state and the 92 counties.

For more detail on STF 2 or other census products and services of the Data Center contact us by writing or calling:

INDIANA STATE DATA CENTER
Indiana State Library
140 N. Senate Ave.
Indianapolis, IN 46204
(317) 232-3735 or 232-3733

INDIANA INDUSTRIAL ELECTRICITY SALES
(Seasonally Adjusted in Millions of Kilowatt Hours)

	June 1982	*May 1982*	*June 1981*	*Percent Change From*	
				One Month Ago	*One Year Ago*
Anderson	20.2	19.6	18.7	3.1	4.8
Bedford	12.0	12.0	16.9	0	−29.0
Bloomington	4.5	4.3	3.5	4.7	28.6
Columbus	19.1	17.9	24.4	6.7	−21.7
Connersville	9.3	8.2	9.3	13.4	0
Crawfordsville	10.3	10.4	10.3	−1.0	0
East Chicago	20.3	21.0	26.6	−3.3	−23.7
Elkhart	21.2	23.9	23.5	−11.3	−9.8
Evansville	47.3	45.0	45.1	5.1	4.9
Fort Wayne	42.5	44.1	52.2	−3.6	−18.6
Frankfort	8.5	8.4	9.0	1.2	−5.6
Gary	130.2	133.9	167.1	−2.8	−22.1
Goshen	9.0	8.5	9.1	5.9	−1.1
Hammond	59.1	58.8	59.4	.5	−.5
Huntington	4.6	4.5	4.0	2.2	−6.1
Indianapolis	346.7	313.8	341.1	10.5	1.6
Jeffersonville	5.2	5.3	6.5	−1.9	−20.0
Kokomo	61.0	64.2	71.9	−5.0	−15.2
Lafayette	36.4	37.6	39.3	−3.2	−7.4
LaPorte	13.8	13.6	15.4	1.5	−10.4
Logansport	7.4	7.6	9.5	−2.6	−22.1
Madison	2.3	2.3	2.4	0	−4.2
Marion	31.6	33.0	33.7	−4.2	−6.2
Michigan City	42.4	45.1	47.9	−6.0	−11.5
Mishawaka	3.7	3.6	NR*	2.8	–
Muncie	13.7	14.3	18.3	−4.2	−25.1
New Albany	5.1	4.8	5.0	6.3	2.0
New Castle	7.5	7.7	8.5	−2.6	−11.8
Peru	4.7	5.1	4.9	−7.8	−4.1
Richmond	25.5	21.5	26.8	18.6	−4.9
Seymour	2.4	2.3	2.6	4.3	−7.7
South Bend	26.7	29.9	28.1	−10.7	−5.0
Terre Haute	25.4	24.8	33.1	2.4	−23.3
Valparaiso	8.8	8.8	9.1	0	−3.3
Vincennes	2.8	2.8	2.6	0	7.7
Wabash	6.8	6.4	7.6	6.3	−10.5
Indiana	**1,740.6**	**1,704.0**	**1,895.6**	**2.1**	**−8.2**

*Not reported.
SOURCES: Data provided monthly by public and municipal electric companies.

UNITED STATES–INDIANA BUSINESS INDICATORS*

(Seasonally Adjusted Indexes Unless Otherwise Noted; Base Period: 1967 = 100)

		United States				*Indiana*		
		Latest Month	*Previous Month*	*One Year Ago*		*Latest Month*	*Previous Month*	*One Year Ago*
EMPLOYMENT								
Nonagricultural employment	June	136.8	137.0	138.7	June	113.4	114.3	119.1
Manufacturing employment	June	97.5	98.3	104.6	June	83.4	83.8	93.1
Average weekly hours (No.)+	June	39.2	39.0	40.2	June	39.6	39.2	40.6
Average weekly earnings ($)+	June	333.59	329.55	320.39	June	388.08	381.81	379.20
Nonmanufacturing employment	June	152.9	153.0	152.7	June	133.8	134.6	136.7
Unemployment rate (%)	June	9.5	9.5	7.4	June	11.3	12.0	9.8
Unemployment-married males (%)	June	6.5	6.1	4.2	–	–	–	–
Continued unemployment claims	June	–	–	–	June	552.1	432.7	650.7
PRODUCTION								
Bituminous coal production	May	148.4	156.4	75.8	–	–	–	–
Industrial electricity production	Mar.	135.1	136.0	152.1	–	–	–	–
Industrial electricity sales	–	–	–	–	June	150.3	148.6	163.3
Manufacturing production	June	137.3	138.2	152.4	June	137.9	136.5	152.4
Raw steel production	June	57.1	58.6	98.4	June	90.0	97.9	138.3
CONSTRUCTION								
Construction activity-Total	May	295.8	292.1	311.0	June	191.8	184.2	209.6
Residential housing starts	June	70.9	83.7	81.4	June	67.8	39.8	65.0
Residential expenditures	May	295.5	285.6	353.4	June	173.6	171.9	233.6
Nonresidential expenditures	May	296.0	295.2	290.3	June	176.1	179.9	216.8
Public expenditures	May	191.8	198.4	202.0	–	–	–	–
Public works and utilities	–	–	–	–	June	226.4	196.7	145.6
OTHER INDICATORS								
Personal income per capita ($)	May	11,012.1	10,941.2	10,360.9	82:1	9,887.0	9,839.0	9,484.0
Passenger car sales (thousands)	June	651.0	774.0	724.0	May	15.6	13.2	15.8
Year to date (thousands)	June	4,039.0	3,388.0	4,584.0	May	62.7	47.1	81.6

*Current indicators are preliminary and subject to revision.

+Not seasonally adjusted.

SOURCES: Data on Indiana construction from McGraw-Hill Information Systems Company; Indiana passenger car registration from R.L. Polk & Co.; indexes of raw steel production for the United States and Indiana courtesy of American Iron and Steel Institute, Washington, D.C.; all other data from U.S. and Indiana government agencies and Division of Research, School of Business, Indiana University.

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Educational Attainment and Retention in Indiana

In this issue . . .

Economic development starts with the people. Is Indiana experiencing a "brain drain" which could retard our future? Do the people support economic development? These two topics are explored in this issue. The first topic is examined by reference to data for 1979, the latest information available. The second topic is addressed specifically to the Terre Haute community. Community support for economic development may offset some of the loss in human resources.

A review of the first seven months of Indiana's business suggests little progress toward recovery. Readers are cautioned to avoid extrapolation of the negative past as well as a too early optimism which declares, "It can't get worse."

Morton J. Marcus,
Editor

INDIANA BUSINESS REVIEW

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MORTON J. MARCUS

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In today's competitive economic environment, states are most concerned with the resources they have to attract and hold business prospects. Among the most important resources are the men and women with contemporary skills and the knowledge to acquire new skills. Their educational characteristics have become critical components in planning a state's economic development.

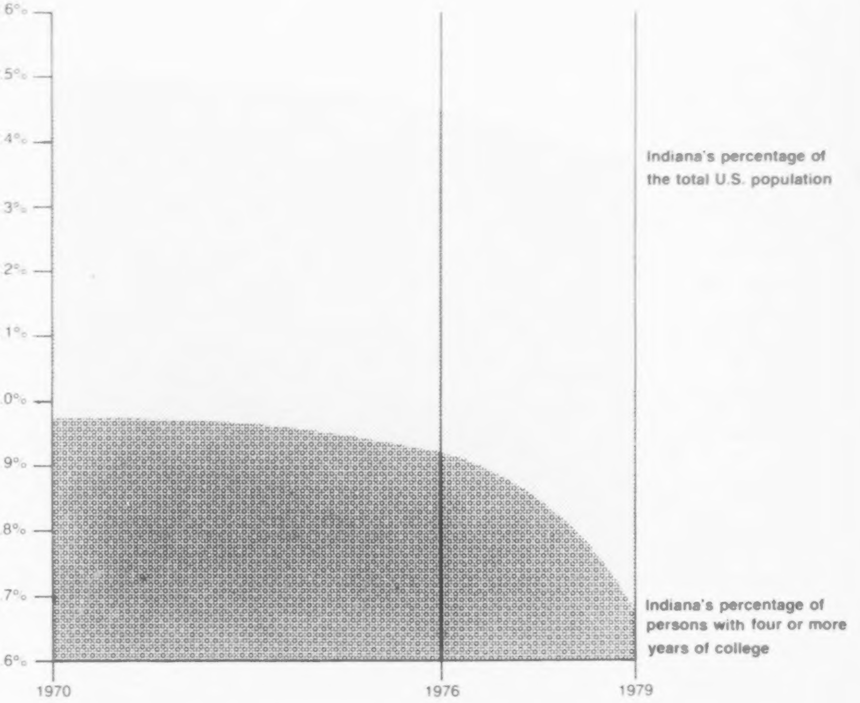
The data have yet to arrive from the 1980 Census of Population which would allow a detailed discussion of the often mentioned "brain drain" from Indiana. We can, however, use 1979 data to illustrate the contention that Indiana's educational status lags the nation and may be deteriorating.

The past decade, as shown in Figure 1, witnessed a decline in Indiana's share of the nation's population from 2.51 percent to 2.38 percent. The decline in our state's share of persons with four or more years of college, however, was even more dramatic, falling from 1.97 percent to 1.68 percent.

Figure 2 shows the percent of the population having completed four or more years of college, for Indiana and the United States as a whole. In all age groups, Indiana trails the nation. The gap among the 35 to 44 year old population is of particular note, since this group might be expected to offer high levels of productivity and entrepreneurial effort. Given that the educa-

Figure 1

INDIANA'S DECLINING SHARE



tional attainment for the group of persons 45 to 54 years old in Indiana (11.8 percent) is higher than for the 35 to 44 group, (10.4 percent) we may imagine a sharp outward flow of the state's college-educated population. Without detailed migration data, the brain drain hypothesis can only be suggested, not proven. But we would expect that Indiana would have a smoother curve similar to the national pattern, if not for some strong divergent force.

One possibility is that Hoosiers now age 35 to 44 were well below the national level in educational attainment when they were younger, at age 25 to 34. In Figure 2 we see that in 1979 those 25 to 34 are about five percentage points behind the nation in college completion. In Figure 3 we see a similar five percentage point differential between Indiana and the nation for persons 25 to 34 in 1970. When this cohort of persons in Indiana had reached ages 35 to 44 in 1979, the differential with the U.S. had increased to nearly ten percentage points. During the decade in which this cohort across the nation was increasing its educational attainment, there was a decline in Indiana. Although education itself may atrophy, years of school cannot be lost. The Hoosier decline in percent of population age 35 to 44 with four or more years of college can be ascribed either to:

1. Growth in Indiana's population age 35 to 44 made up of a large number of persons with less than four years of college (a most unlikely event), or;

2. A decline in the number of persons with four or more years of college through out-migration (the more likely event) or higher death rates.

If we reject the idea that higher education increases mortality, we are left to believe that persons with four or more years of college have been leaving Indiana to use their educational capital in other, more promising economic areas.

During the past decade, this crucial cohort, persons in their thirties, were adding to their educational attainment as seen by the upward slope of the national curve in Figure 3. Through night courses and part-time attendance, persons with four or more years of college increased as a portion of the nation's population. If Hoosiers followed the same pattern of adding to educational attainment, then the lower incidence of college completion

Figure 2

PERCENT OF PERSONS WITH FOUR OR MORE YEARS OF COLLEGE (1979 FIGURES)

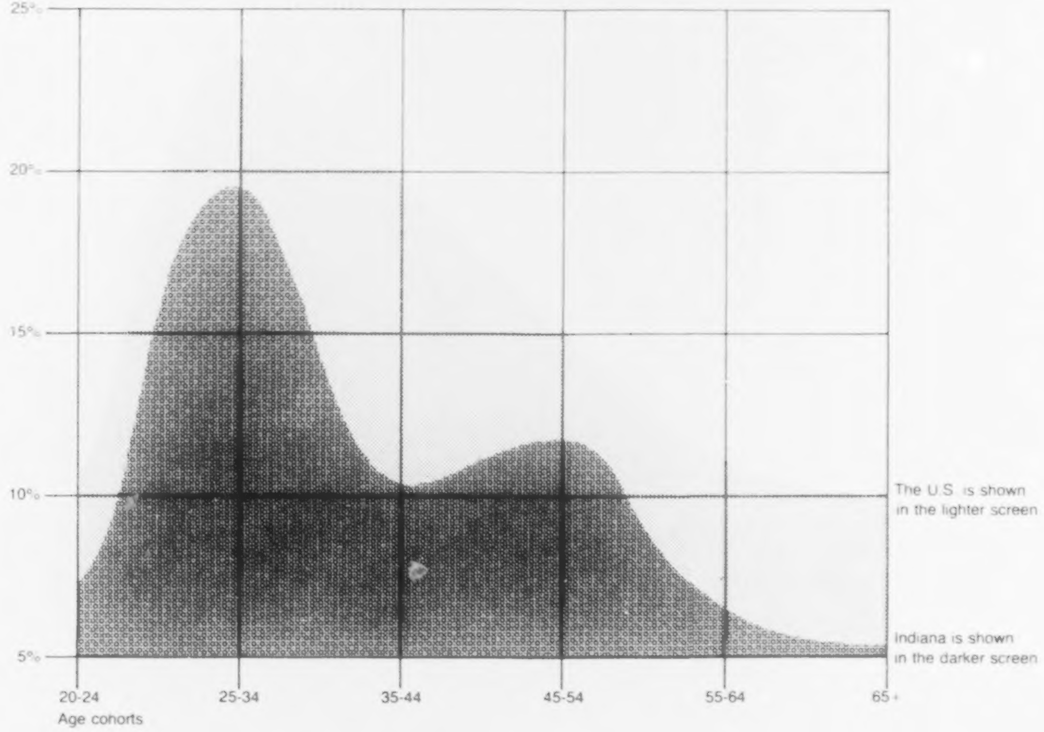
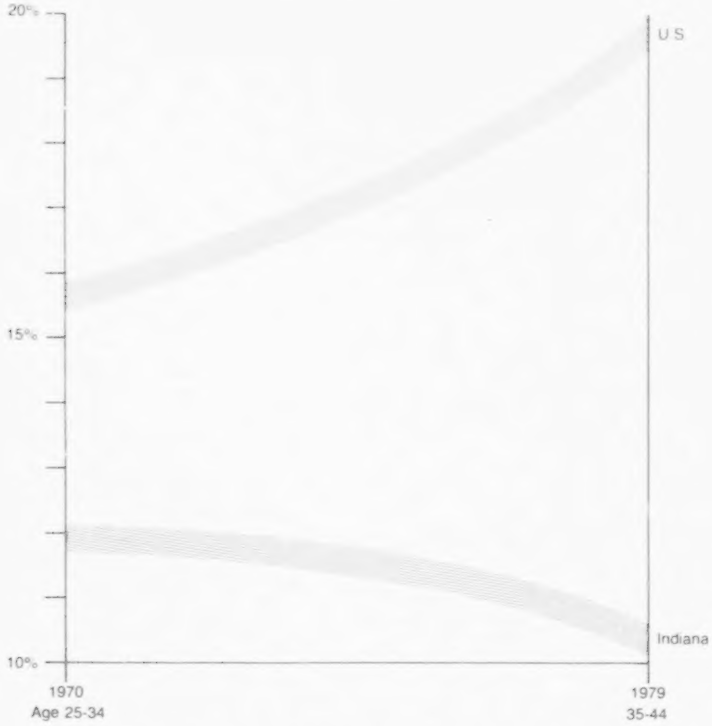


Figure 3

PERCENT OF PERSONS WITH FOUR OR MORE YEARS OF COLLEGE FOR A SINGLE COHORT



shown by the falling line in Figure 3 represents investments made by students, their companies, and the citizens of Indiana which will be returning benefits to other communities in other states.

A jingoistic attitude would view such out-migration of educational capital as a waste of the state's resources. A more realistic approach would regret the lost opportunities for Indiana, but take comfort in the knowledge that we have prepared our citizens to be effective, perhaps even well-paid, albeit elsewhere.

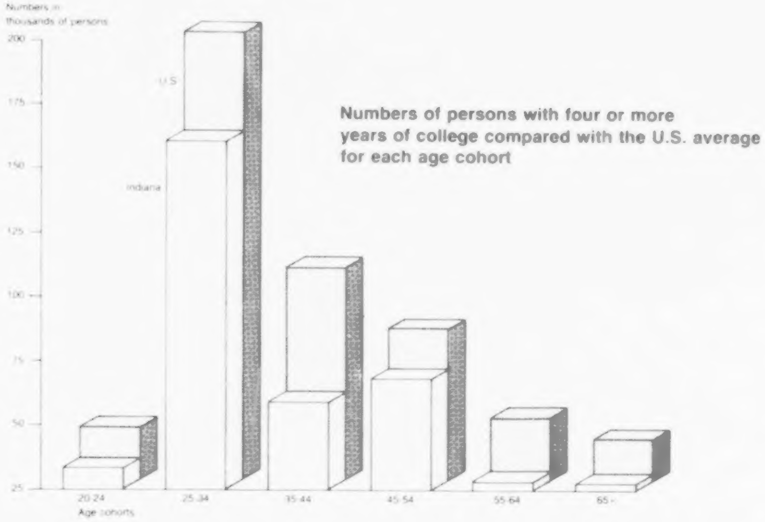
We can see in the clear bars of Figure 4 the number of persons with four or more years of college in Indiana by age group. If Indiana had the same incidence of persons with four or more years of college as the nation, then we would have the number of persons shown by the darker bars. The distance between the Indiana experience and the national average as applied to the Hoosier state is shown more dramatically as a deficiency in Figure 5. Here each bar shows how many more Hoosiers, in each age group, there would have been in Indiana had we the same incidence (percentage of persons with four or more years of college) as the nation. This deficiency or educational deficit totaled 163,600 persons in 1979.

How can we interpret such a number? One way would be to say that an additional 163,600 Hoosiers currently living in the state would have four or more years of college if we kept up with the nation. If we believe that economic development is aided and encouraged by the presence of a well-educated populace, this deficiency is not just a loss for those 163,600 Hoosiers, but for all of us who fail to realize the gains in income, involvement, and knowledge which these citizens could offer.

There is a partnership between persons of different attributes. In the so-called high-tech states of California and Massachusetts, there is a one-to-one relationship between persons with less than four years of high school and those with four or more years of college. In the U.S. in general, and Illinois and Missouri specifically, there are two persons with less than four years of high school for each person with four or more years of college. In Indiana, the ratio is three to one. If education brings benefits of advanced job opportunities, higher community income and greater support for public services, then the people of Indiana with less than a high school education have fewer complementary resources (college-educated persons) with whom to build for the future.

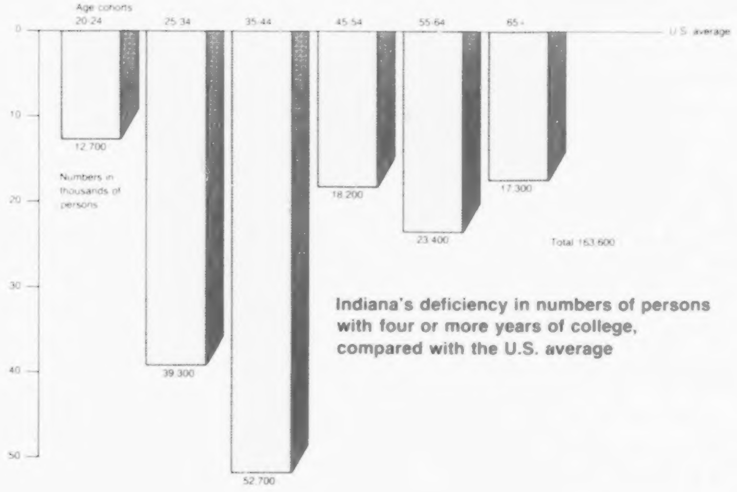
Note: This article features graphics developed by Marcia Busch-Jones from data prepared by Harrison Ullman using materials from the U.S. Bureau of the Census, *Current Population Reports*, Series P 20 #356.

Figure 4



Numbers of persons with four or more years of college compared with the U.S. average for each age cohort

Figure 5



Indiana's deficiency in numbers of persons with four or more years of college, compared with the U.S. average

Community Attitudes Toward Industry in Terre Haute

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The successful location of an industrial establishment in a community can realistically be viewed as a matching process. Not only must the needs of the establishment for competitive costs and market access be served, but the needs of the community must also be protected. Certainly, the attraction of new establishments to an area should not result in deterioration of the economic, cultural, political, and environmental conditions in the community.

Individual attitudes toward specific industrial impacts vary widely. Further, given that differences exist among communities, composite local attitudes toward industry may also be assumed to vary. What may be broadly acceptable in one community may stimulate hostility and resistance if introduced into another. An unwanted establishment may quickly face tax, zoning, building code, urban service, and labor supply problems as its local impacts are progressively felt.

Allusions to the importance of local attitudes are scattered through the literature, and occasionally reference is made to their consideration as a factor in plant location efforts. However, only two recent studies have dealt directly with the issue of local attitudes in industrial development. One assessed University of Nebraska student attitudes toward industrial location in Nebraska,[1] and the other assessed community attitudes toward industrial development in "a West Texas community." The latter dealt with industry preferences, development policy preferences, and acceptability of new industry.[2]

With little available prior research, the Terre Haute case study was undertaken to provide an expanded perspective on the

Table 1

EVALUATION OF POSSIBLE INDUSTRIAL IMPACTS

Rank	*Potential Impact (Groupings)**	*Mean Score*
1.	Provides jobs for local people (C)	4.287
2.	Provides new employment (E)	4.247
3.	Attracts new people to area (C)	4.180
4.	Reduces unemployment (C)	4.151
5.	Generates new construction (E)	4.135
6.	Adds to area professional population (C)	4.068
7.	Stimulates other area business (E)	4.026
8.	Attracts still more industry to area (E)	3.987
9.	Results in improved local school (C)	3.958
10.	Results in increased cultural activities (C)	3.893
11.	Provides minority job opportunities	3.893
12.	Provides above average wages (E)	3.826
13.	Adds to local tax base (E)	3.813
14.	Stimulates urban growths (E)	3.797
15.	Interlinks with other area industry (E)	3.394
16.	Generates urban growth (C)	3.721
17.	Increases area land values (E)	3.711
18.	Creates job security thru unions (C)	3.552
19.	Adds to demand for urban services (P)	3.531
20.	Adds to "labor" vote in the city (P)	3.391
21.	Results in annexation of outlying areas (P)	3.300
22.	Adds to union strength in area (P)	3.234
23.	Requires modification of building codes (P)	3.232
24.	Increases local housing costs (E)	3.227
25.	Requires zoning changes (P)	3.221
26.	Influences local political decisions (P)	3.148
27.	Increases stress in community life (C)	3.094
28.	Requires community financed development efforts (P)	3.078
29.	Requires tax concessions to come to area (P)	3.029
30.	Restricts use of adjoining land (P)	2.977
31.	Increases rail traffic (En)	2.750
32.	Increases traffic congestion (En)	2.594
33.	Occupies scarce land (En)	2.552
34.	Increases urban noise (En)	2.406
35.	Creates unattractive areas (En)	2.365
36.	Generates dust (En)	2.302
37.	Involves hazardous processes (En)	2.258
38.	Generates water pollution (En)	2.225
39.	Generates air pollution (En)	2.208
40.	Generates odors (En)	2.148

*(C) Cultural, (E) Economic, (P) Political, (En) Environmental.

nature of community-wide attitudes toward industry. (Funding for the research was provided by the Indiana State University Research Committee.)

THE ANALYSIS

Three basic questions should be posed in an analysis of community attitudes toward industry. First, does the community want new industry? Second, how would the community evaluate various types of possible industrial impacts? And third, what does the term "industry" mean to the community? A questionnaire was developed to resolve these questions. Responses were obtained from a random sample of 384 Terre Haute residents during July and August of 1980. The sample is sufficient to generate statistically valid results.

The residence sample was developed by random selection from the telephone directory. For each individual selection the directory page number and then the specific listing on the page were identified with the use of a table of random numbers. A mailing of 500 questionnaires generated 91 completed responses. Direct interviews provided results from another 293 individuals. When respondents were not at home at a selected residence, the one "to the right" was selected. For example, in dealing with single family homes, the next house to the right on the block would be selected when facing the sample house from the street.

WOULD YOU LIKE TO SEE NEW INDUSTRY DEVELOPED IN TERRE HAUTE?

Respondents were asked to provide a yes or no reaction to the prospect of new industrial development in the community. The response was overwhelmingly favorable with 362 of 384 respondents answering yes. This response, with 94 percent of the sample favoring new industry, would seem to indicate an exceptional level of local support for new local industrial development.

Table 2

ASPECTS OF INDUSTRY RECOGNIZED BY TERRE HAUTE RESPONDENTS

Aspect	*Number of Responses*		*Percent*
Positive Impacts		288	55.0
Employment	198		
Community economic growth	40		
Community improvement	21		
Less crime	11		
Generates tax revenues	7		
Other	22		
Activity		161	30.7
Manufacturing (production of goods)	95		
Business, commerce	38		
Provision of services	19		
Other (retail, trade, etc.)	9		
Facility		50	9.5
Factory, plant	44		
Other	6		
Negative Impacts		25	4.8
Environmental	22		
Cultural (crime)	3		
Total		524	100.0

HOW DO YOU EVALUATE POSSIBLE INDUSTRIAL IMPACTS?

On the questionnaires, respondents were asked to rate each of forty possible industrial impacts on a five point scale ranging from very good to very bad. Economic, cultural, political, and environmental groupings were indicated, with ten possible impacts listed under each heading.

The ratings were tallied for each impact and then converted into scores. Very good ratings were scored 5, good 4, average 3, bad 2, and very bad 1. The mean score for each impact was then calculated and the impacts rank ordered in terms of their means (see Table 1). Graphing of the mean scores suggested boundaries between groups of impacts would be appropriate at mean scores of 3.4 and 2.8.

The mean scores in the highest group ranged from 3.531 to 4.287. Relating almost exclusively to the economic and cultural impacts of industrial employment and to impacts resulting in area growth, the group impacts are viewed as potentially favorable in Terre Haute. Clearly, area employment and growth resulting from new industry would be well received locally.

The middle group of potential impacts had mean scores ranging from 2.977 to 3.391. Most of the impacts in this group were political and most exhibited slightly positive ratings (slightly above 3.0). Thus, the possible political impacts of local industrial development would be viewed with mild approval in the Terre Haute area. Increases in local housing costs and increased community stress were classed with the political impacts, even though their effects upon the respondents might well be negative.

Predictably, possible environmental impacts generated negative responses and exhibited means ranging from 2.148 to 2.650. The environmental impacts comprise a group which would contribute to a deterioration of the quality of life in the area and this is clearly understood by the area population. However, variation in the degree of opposition to the different environmental impacts is obvious from the in-group mean scores. Although increased rail traffic and traffic congestion are not viewed as desirable, they might well be tolerated; the prospect of significant new odor problems, air or water pollution, or introduction of hazardous processes would be much more likely to generate significant local opposition.

WHAT DOES THE TERM "INDUSTRY" MEAN TO YOU?

Questionnaire respondents were asked to indicate the meaning to them of "industry" and 84 percent (323 of 384) did so. The responses ranged from a single word to two or three sentences in length. In analyzing the answers each expressed concept was considered a response and a single respondent could be credited with several "answers." Thus, "jobs in a manufacturing plant" would be considered recognition of 1) employment, 2) the manufacturing process, and 3) the physical facility. The results are summarized in Table 2.

The dominant single characterization (55 percent) was that industry generated positive impacts and, more specifically, employment. This was seen as resulting from manufacturing or other economic activity (by 30.7 percent) sited in a factory or plant (by 9.5 percent). Despite just having rated a number of unwanted environmental impacts, the negative aspects of industrial development represented less than 5 percent of the characterization of "industry" by the respondents.

To the resident of Terre Haute the term "industry" suggests jobs, area growth, and other local benefits. This view dominates the local perception of industry and would seem to be the basis for the very positive local reaction to the prospect of area industrial growth. The positive aspects of such growth are far more clearly perceived than the problems it might generate.

CONCLUSIONS

From the present analysis, the residents of Terre Haute, Indiana appear to be highly receptive to the prospect of new industry locating in their community. Employment and growth are overwhelmingly seen as the results of industrial attraction. Negative impacts are, of course, not desired. Opposition to new local problems of industrial odors, air and water pollution, and hazardous processes might become intense. Despite this, 95 percent of the area population would support the development of new industry within the Terre Haute area. This support should be a very positive element in the success of local industrial attraction efforts.

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1. Raymond Hubbard, "The Measurement of Perception and Attitudes Toward Industry," *The Geographical Bulletin*. Vol. 4, April 1972, pp. 216-223.

2. Robert T. Green and Grady D. Bruce, "The Assessment of Community Attitudes toward Industrial Development," *Growth and Change*, Vol. 7, January 1976, pp. 28-33.

Indiana's Business

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RECENT BUSINESS ACTIVITY

The cumulative picture of the state's economy through July of this year offers little encouragement to the business community. If a turnaround is at hand, there is no evidence in the figures thus far available for Indiana. The following notes may be useful in the future to indicate how far down this recession has brought various sectors of the state.

Note: All data in the following paragraphs have been adjusted for seasonal variations.

HOUSING STARTS

Through July of this year housing starts have totalled 8,750 units. This is 39.8 percent below the 14,537 units started during the same period last year, and 18.9 percent below the January through July period of 1980 (10,791 units). The performance of housing in Indiana so far this year appears even more bleak when compared with the same period of 1979 and 1978 (21,310 and 26,918 starts, respectively). As of July 1981 housing starts are 58.9 percent below 1979 levels, and 67.5 percent below 1978 levels. If housing continues in this year at its current rate, total starts would reach only 14,100, the lowest level since 1955. See figure 1.

TOTAL CONSTRUCTION ACTIVITY

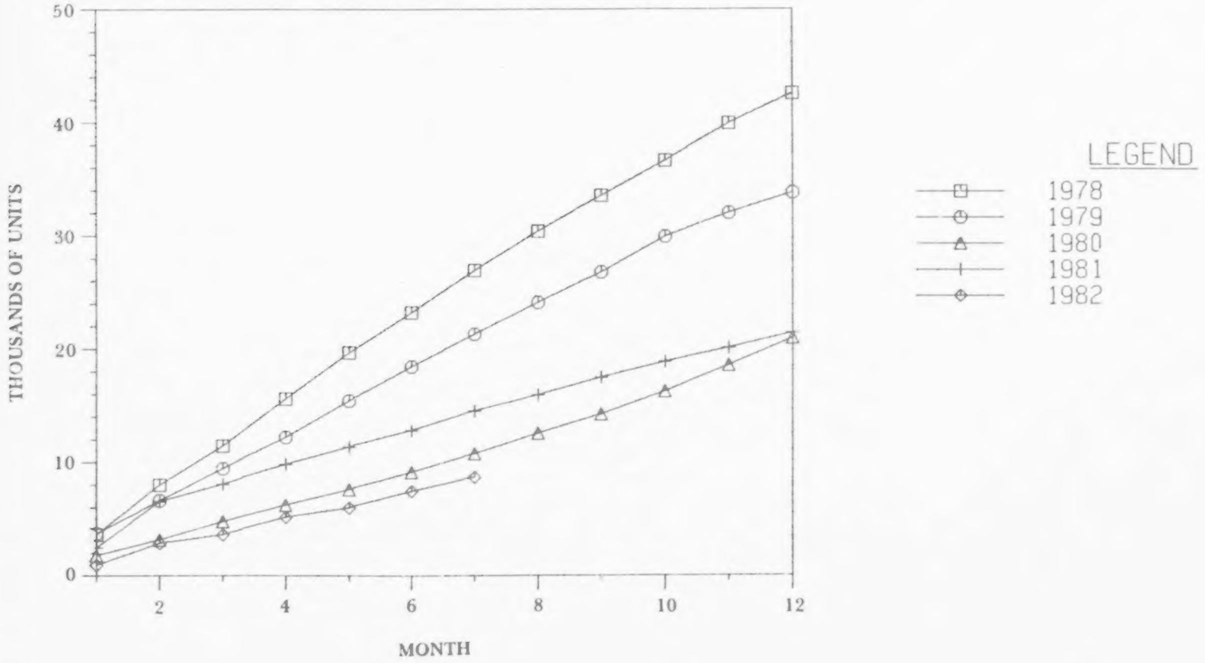
As of July, total construction activity in Indiana has amounted to $1.40 billion. This is 18.6 percent below the 1981 level of $1.72 billion, and 25.9 percent below the 1980 level of $1.89 billion. Compared to the same period of 1979 and 1978, this year so far is 57.6 percent below 1979 (3.30 billion) and 52.4 percent below 1978 (2.94 billion). These year-to-year comparisons do not consider the effects of inflation, indicating that the real level of activity in construction is down even further.

RAW STEEL

Indiana's raw steel production through July of this year amounted to 10.24 million tons. This represents a 25.7 percent decline compared to the same period in 1981 (13.78 million tons) and a 7.2 percent decline when compared to the January through July period of 1980 (11.03 million tons). The current year's total raw steel production is 27.0 percent below the same period in 1979 (14.03 million tons), and is 24.3 percent below the 1978 level (13.53 million tons).

Figure 1

CUMULATIVE INDIANA SEASONALLY ADJUSTED HOUSING STARTS



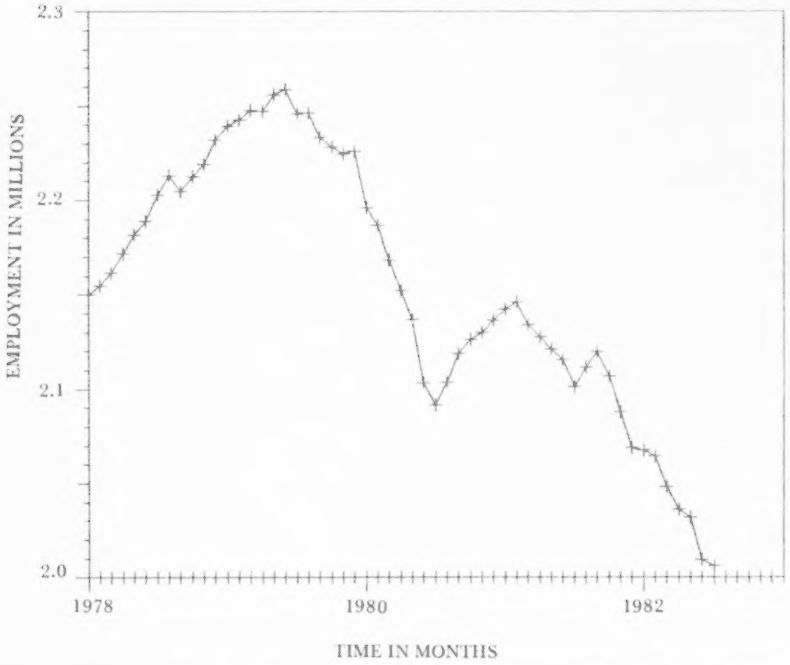
While steel production is continuing to decline in Indiana, the state has faired better than the rest of the nation. Over the period of July 1978 to July 1982 U.S. steel production declined 48.8 percent, while Indiana's steel output dropped by only 33.1 percent for the same period. As of July, Indiana is the leading raw steel producing state in the nation, with Ohio being a distant second.

NONAGRICULTURAL EMPLOYMENT

Nonagricultural employment in Indiana has been declining steadily over the past nine months, from 2,119,500 in September of 1981 to 2,006,000 in July of this year. Since the first of the year, employment has declined almost 3.0 percent or by nearly 62,000 jobs. Historically, July's 2,006,000 employed is 10.7 percent below a 1979 peak (2,245,900), or a loss of nearly 240,000 jobs. See figure 2.

Figure 2

INDIANA SEASONALLY ADJUSTED NONAGRICULTURAL EMPLOYMENT



U.S. MAN–HOURS IN INDUSTRIAL PRODUCTION
(Seasonally Adjusted Data)

		United States				Indiana		
		Latest Month (millions)	*Percent Change From*			*Latest Month* (thousands)	*Percent Change From*	
			One Month Ago	*One Year Ago*			*One Month Ago*	*One Year Ago*
Manufacturing	**July**	**729.6**	**−1.4**	**−10.4**	**June**	**23,110.8**	**−1.3**	**−12.6**
Food	July	66.2	4.0	-3.4	June	1,485.1	1.3	-1.8
Apparel and textiles	July	65.6	-7.2	-12.5	June	405.9	3.1	-7.1
Lumber and wood	July	23.6	-4.1	-14.9	June	625.4	-1.3	-17.6
Furniture	July	16.5	0.9	-8.3	June	650.6	4.0	-14.2
Paper	July	27.1	0.8	-6.5	June	517.7	-3.6	-9.5
Printing	July	45.9	1.6	-6.8	June	1,121.4	0.9	-9.1
Chemicals	July	46.1	3.3	-5.4	June	1,285.6	1.6	-0.8
Petroleum and products	July	9.1	0.9	-5.6	June	188.8	7.0	-9.5
Rubber and plastics	July	27.5	-2.0	-7.0	June	1,204.1	0.2	-7.5
Stone, clay and glass	July	23.9	-1.3	-11.0	June	837.1	-1.0	-8.4
Primary metals	July	35.3	-2.0	-22.2	June	3,413.1	0.1	-16.8
Fabricated metals	July	55.6	-3.1	-8.3	June	1,902.9	-1.5	-9.1
Nonelectrical machinery	July	84.7	-7.0	-12.6	June	2,469.3	-4.0	-18.2
Electrical machinery	July	81.4	1.8	-5.6	June	3,695.4	-1.5	-13.7
Transport equipment	July	73.1	0.6	-4.1	June	3,028.0	0.4	-12.8

MANUFACTURING EMPLOYMENT

Manufacturing employment for July of this year for Indiana stood at 598,182. This is a very slight improvement from June's figure (597,815). The July level is still 3.1 percent below the January 1982 level (617,470), and 10.0 percent below July a year ago (664,858). Compared to the same month in 1979, the July 1982 level is 19.0 percent lower, representing a loss of 140,200 jobs.

NONMANUFACTURING EMPLOYMENT

Indiana's nonmanufacturing employment has experienced a lesser decline in recent years. Since January of this year, nonmanufacturing employment has declined 2.3 percent (1,447,000 to 1,413,500). Historically, July's nonmanufacturing employment is 6.3 percent below July 1979 (1,509,200).

Jerry E. Vest

INDIANA INDUSTRIAL ELECTRICITY SALES
(Seasonally Adjusted in Millions of Kilowatt Hours)

	July 1982	*June 1982*	*July 1981*	*Percent Change From*	
				One Month Ago	*One Year Ago*
Anderson	20.1	20.2	22.4	–.5	–10.3
Bedford	13.5	12.0	14.3	12.5	–5.6
Bloomington	4.8	4.5	3.5	6.7	37.1
Columbus	16.1	19.1	23.3	–15.7	–30.9
Connersville	7.8	9.3	9.6	–16.1	–3.1
Crawfordsville	10.9	10.3	10.0	5.8	9.0
East Chicago	17.7	20.3	24.9	–12.8	–28.9
Elkhart	21.0	21.2	23.7	–.9	–11.4
Evansville	46.2	47.3	52.3	–2.3	–11.7
Fort Wayne	39.0	42.5	44.0	–8.2	–11.4
Frankfort	7.8	8.5	8.5	–8.2	–8.2
Gary	126.3	130.2	162.1	–3.0	–22.1
Goshen	8.1	9.0	9.1	–10.0	–11.0
Hammond	58.3	59.1	56.8	–1.4	2.6
Huntington	5.1	4.6	5.6	10.9	–8.9
Indianapolis	377.2	346.7	383.5	8.8	–1.6
Jeffersonville	5.2	5.2	6.7	0.0	–22.4
Kokomo	70.4	61.0	70.1	15.4	.4
Lafayette	40.2	36.4	34.8	10.4	15.5
LaPorte	13.4	13.8	14.2	–2.9	–5.6
Logansport	8.7	7.4	10.9	17.6	–20.2
Madison	2.4	2.3	2.4	4.3	0.0
Marion	31.2	31.6	30.8	–1.3	1.3
Michigan City	43.9	42.4	48.9	3.5	–13.3
Mishawaka	4.1	3.7	4.6	10.8	–10.9
Muncie	13.0	13.7	15.1	–5.1	–13.9
New Albany	4.8	5.1	5.3	–5.9	–9.4
New Castle	8.2	7.5	9.0	9.3	–8.9
Peru	4.8	4.7	5.2	2.1	–7.7
Richmond	23.5	25.5	26.5	–7.8	–11.3
Seymour	2.4	2.4	2.6	0.0	–7.7
South Bend	26.3	26.7	28.3	–1.5	–7.1
Terre Haute	25.8	25.4	33.0	1.6	–21.8
Valparaiso	8.8	8.8	9.6	0.0	–8.3
Vincennes	3.0	2.8	2.2	7.1	36.4
Wabash	6.2	6.8	6.5	–8.8	–4.6
Indiana	**1,787.6**	**1,740.6**	**1,941.4**	**2.7**	**–7.9**

SOURCES: Data provided monthly by public and municipal electric companies.

UNITED STATES–INDIANA BUSINESS INDICATORS*

(Seasonally Adjusted Indexes Unless Otherwise Noted; Base Period: 1967 = 100)

		United States				*Indiana*		
		Latest Month	*Previous Month*	*One Year Ago*		*Latest Month*	*Previous Month*	*One Year Ago*
EMPLOYMENT								
Nonagricultural employment	July	136.6	136.6	138.9	July	112.9	113.1	118.3
Manufacturing employment	July	96.9	97.3	104.8	July	83.5	85.5	92.9
Average weekly hours (no.)+	July	38.9	39.3	39.6	July	39.4	39.7	40.2
Average weekly earnings ($)+	July	332.60	334.05	317.59	July	386.51	388.66	376.67
Nonmanufacturing employment	July	152.9	152.6	153.1	July	133.2	133.2	136.1
Unemployment rate (%)	July	9.8	9.5	7.2	July	11.1	11.3	9.4
Unemployment–married males (%)	July	6.6	6.5	3.9	—	—	—	—
Continued unemployment claims	—	—	—	—	July	467.6	552.1	695.9
PRODUCTION								
Bituminous coal production	June	143.1	148.4	122.7	—	—	—	—
Industrial electricity production	Apr.	133.3	135.1	151.2	—	—	—	—
Industrial electricity sales	—	—	—	—	July	154.0	150.3	167.4
Manufacturing production	July	137.1	137.1	153.2	July	138.1	137.9	151.4
Raw steel production	July	56.2	57.1	99.8	July	98.4	90.0	143.1
CONSTRUCTION								
Construction activity–Total	July	291.5	293.6	303.7	July	197.6	191.8	202.3
Residential housing starts	July	94.3	70.5	80.9	July	57.1	67.8	74.3
Residential expenditures	July	302.2	297.0	342.9	July	184.0	173.6	218.3
Nonresidential expenditures	July	291.5	297.2	290.0	July	174.3	176.1	213.9
Public expenditures	July	190.2	189.8	199.5	—	—	—	—
Public works and utilities	—	—	—	—	July	243.3	226.4	143.7
OTHER INDICATORS								
Personal income per capita ($)	June	11,066.4	11,032.4	10,436.7	82:1	9,887	9,839	9,484
Passenger car sales (thousands)+	July	631.0	651.0	707.0	June	13.2	15.6	15.8
Year to date (thousands)	July	4,670.0	4,039.0	5,291.0	June	75.9	62.7	97.4

*Current indicators are preliminary and subject to revision.

+Not seasonally adjusted.

SOURCES: Data on Indiana construction from McGraw-Hill Information Systems Company; Indiana passenger car registration from R.L. Polk & Co.; indexes of raw steel production for the United States and Indiana courtesy of American Iron and Steel Institute, Washington, D.C.; all other data from U.S. and Indiana government agencies and Division of Research, School of Business, Indiana University.

INDIANA BUSINESS REVIEW

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